12-2017

Satisfaction Levels of Central Minnesota Parents Regarding the School Instruction of their Dyslexic Children

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by

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A Dissertation

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Education

in Educational Administration and Leadership

December, 2017

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Abstract

Statement of the Problem

According to Washburn, Joshi and Cantrell (2011) reading disabilities, such as dyslexia, affect 15-20% of the general population. Educational leadership requires school administrators to educate all students, regardless of their learning styles. With dyslexia affecting an estimated 15-20% of the school population (Washburn et al., 2011), it would be reasonable to assume that students with dyslexia are being underdiagnosed, and therefore underserved.

Consequentially, potential revenue may be lost by public schools whose parents are choosing to enroll their child in the private sector because of past or perceived dissatisfaction in the public school's ability to meet the need of their dyslexic child/ren. Parents are the ultimate consumers of public education. As the care providers and decision makers for their child's education, it would be of interest for educational leaders to understand the satisfaction levels of parents with dyslexic children. [However] there is limited research on the perspectives of parents when evaluating perceived satisfaction with different school environments for their dyslexic students.

Study Purpose

The purpose of the study was to examine perceived levels of satisfaction of public, private and home school learning environments by central Minnesota parents of dyslexic children. The study examined differences in parents' perceived satisfaction with their dyslexic child's school, based on age of child at diagnosis, interventions used, student and teacher attitudes towards dyslexia, co-existing conditions with dyslexia, and implications for educational leaders and policy makers. Further, the study examined the differences in parent perspectives from three different learning environments: home school, private school and public school.

Study Overview

The researcher and two other Dyslexia Testing Specialists evaluated 90 private school, 15 home school and 74 public school students for dyslexia in central Minnesota from September 2007 through December, 2013. Study surveys were distributed to the parents of those students–a total of 179 surveys, one survey per household.

Key Findings

Data analysis found school satisfaction levels reported by parents were similar in home school and private school groups. Those results showed higher satisfaction levels than reported by parents of the public school group. Only 15 of 135 respondents believed that the public school setting was the best environment for dyslexic learners. Even with these findings, only 16 of 135 respondents changed schools based on their child's dyslexia diagnosis. The results of the study provide recommendations for future practice and research that would be beneficial to the field of educational leadership.

Dedication

This dissertation is dedicated to my husband, Dan Stark, and my sons, Kevin and Connor Stark-Haws, who have believed in me since the beginning of this journey. It is also dedicated to my parents, Faith and Larry Haws, who made this all possible. I wish my father would have lived to see me graduate, but I am at peace knowing that he would be proud to know his life work of "Pride, Prayer and Perspiration" lives on in me.

Acknowledgment

A very special thank you to my professors at St. Cloud State University and my committee members: Dr. Kay Worner, who is the definition of strong, competent, and exceptional leadership. Dr. John Eller, who thoroughly understands the doctoral process and getting graduate students across the finish line. Dr. Roger Worner, who teaches with humor, insight and wisdom. And finally, Dr. Jerry Wellik, who was also my advisor as an undergraduate student over three decades ago. A kinder man and better ambassador for St. Cloud State University will never be found.

To Cohort V, you were all amazing and I learned so very much from all of you. I could have never asked for a better group to spend my time with; every one of our weekends will be treasured in my memory. A special thank you to my dear friend, Dory Beutel, who is not only the most dynamic and exceptional professor I have ever witnessed in action, but also a treasured friend who I got to learn and grow beside as a part of Cohort V.

A special thank you goes to Randy Kolb, director of the SCSU Statistical Consulting and Research Center, and Alyssa Miller, Chief Editor of Real Eyes Editing and Writing. Their patience, professionalism and constant support have been instrumental in this process.

To my family and extended family, who have been cheering me on every step of the way. When you have so many believing in you, there is no other option but to believe in yourself. Thanks for being my inspiration for what you are all doing every day.

Finally, thank you to my husband, Dan Stark, who has spent countless hours listening, editing, providing encouragement, and unending support throughout this journey. Thank you

for making all of the sacrifices you made, holding down the home front and building me my own office to pursue my dreams. I love you.

"Opportunity is missed by most people because it is dressed in overalls and looks like work."

-Thomas Edison

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Chapter 1: Introduction

"It is in our schools, public and private, that the young dyslexic faces his greatest challenge. Here he achieves or fails to achieve a sense of his own worth" (Ellis, 1986, p. 1). According to Washburn, Joshi, and Cantrell (2011) reading disabilities, such as dyslexia, affect 15-20% of the general population. The Minnesota Department of Education (2016) website, for the 2013-2014 school year, reported 837,154 K-12 students enrolled in public schools, 69,291 students in private schools, and 17,451 home schooled students. If one were to apply Washburn et al.'s (2011) conservative estimate of 15% to these totaled numbers, then it would be reasonable to conclude that there are 138,584 students with dyslexia in Minnesota's public, private and home school environments.

Dr. Sally Shaywitz, M.D. (2003) asserted that not only is the under-identification (or under-diagnosis) of dyslexic students extremely concerning, but further, when those students are identified it often happens too late. That is, the students are often beyond the optimal age for remediation. Students qualify for special education services for reading disabilities at the third grade or later. Successful remediation at this age is much more difficult to achieve than if the dyslexic student had received specific reading instruction at an earlier age.

Dr. Sally Shaywitz, M.D. in her 1996 Scientific American article, Dyslexia, characterized the often unnoticed signs of the disability. She described an overwhelming response from all parts of the globe: "Africa, Italy, Sri Lanka, Sweden, Israel, Thailand, England, Italy" (Shaywitz, 2003, p. 31). There were stories from students and adults who experienced the same reading difficulties described in the article. It became obvious that dyslexia has no geographic boundaries (Shaywitz, 2003).

In her book, *Overcoming Dyslexia*, Dr. Sally Shaywitz, M.D. stated, "For all parents, choosing the right school for their child is a high priority. This is even more so for a child with a reading disability" (2003, p. 294). In Shaywitz' opinion, most parents prefer to have their child attend a local public school, but find the typical special education program does little to move their dyslexic students forward. Klasen (1988) states that, "Deserted by the school system, parents all the more seek and initiate help for their dyslexic children in the private sector" (p. 26).

Youman and Mather (2013) provided context to claims like Klasen's (1988) and Shaywitz's (2003), having stated that "throughout the various states of the USA, the appropriate identification of dyslexia and the timely provision of interventions are characterized by variability and inconsistency" (p. 133). Youman and Mather (2013) further stated that "State laws must include at least the same rights and protections as federal laws; they can provide more protection, but not less. Clearly, advocates in many states are paving the way for increased understanding and support of individuals with dyslexia" (p. 151). State laws help reduce ignorance; they increase the awareness of dyslexia in the general public and increase the likelihood that schools will be more empathetic in their treatment, support and instruction of students with dyslexia (Youman & Mather, 2013).

Dyslexia and its relationship with student performance in school settings are complicated topics that researchers have been studying for over 100 years (Hudson, High, & Otaiba, 2007). Dr. W. Pringle Morgan (as cited in Shaywitz, 2003) of Seaford wrote in the *British Medical Journal* about Percy F., a 14-year-old boy:

> He has always been a bright and intelligent boy, quick at games, and in no way inferior to others his age. His great difficulty has been- and is now- his inability to

> read. He has been at school or under tutors since he was 7 years old, and the greatest efforts have been made to teach him to read, but, in spite of this laborious and persistent training, he can only with difficulty spell out words of one syllable….I next tried his ability to read figures, and found he could do so easily. He read off quickly the following: 785, 852, 017, 20,969, and worked out correctly: (a=X)(a-x)=a2-x2….He says he is fond of arithmetic, and finds no difficulty with it, but that printed or written words "have no meaning to him" and my examination of him quite convinces me he is correct in that opinion…He is what [Adolf] Kussmaul [a German neurologist]has identified as "word blind". . . .
>
> I might add that the boy is bright and of average intelligence in conversation. His eyes are normal . . .and his eyesight is good. The school master who has taught him for some years says that he would be the smartest lad in the school if the instruction were entirely oral. (Shaywitz, 2003, pp. 13-14)

Statement of the Problem

Educational leadership requires school administrators to educate all students, regardless of their learning styles. With dyslexia affecting an estimated 15-20% of the school population (Washburn et al., 2011), it would be reasonable to assume that students with dyslexia are being underdiagnosed and, therefore, underserved.

Consequentially, potential revenue may be lost by public schools whose parents are choosing to enroll their child in the private sector because of past or perceived dissatisfaction in the public school's ability to meet the needs of their dyslexic child(ren). Parents are the ultimate consumers of public education. As the care providers and decision makers for their child's education, it would be of interest for educational leaders to understand the satisfaction levels of parents with dyslexic children.

Purpose of the Study

The purpose of the study is to examine satisfaction levels of Central Minnesota parents regarding the public, private and home school learning environments of their children with dyslexia. In addition, the study will focus on factors that may shape parent satisfaction.

Incorporating these parental perspectives in programming for students with dyslexia may lead to improvements and higher satisfaction rates. The information from the study is intended to assist teachers and administrators in their delivery and supervision of programs for students with dyslexia.

The study purpose was: (1) compare and contrast the satisfaction of parents of students with dyslexia regarding the efficacy of public, private and home school environments; (2) identify causal factors of the satisfaction levels; and (3) determine what educational leaders and schools can do to improve efficacy for students with dyslexia.

Research Questions

Shaywitz (2003) asserted that not only is the under-identification (or under-diagnosis) of dyslexic students extremely concerning, but further, when those students are identified it often happens too late. That is, the students are often beyond the optimal age for remediation. Students qualify for special education services for reading disabilities at the third grade or later. Successful remediation at this age is much more difficult to achieve than if the dyslexic student had received specific reading instruction at an earlier age.

The following research questions were addressed in the study:

1. How satisfied were Central Minnesota parents of dyslexic students with their schools?
2. How did the 2015 levels of school satisfaction of parents of dyslexic students differ by learning environments (public, private, homeschool)?
3. How did satisfaction levels of Central Minnesota parents of dyslexic students differ on the basis of the following factors?

a) Age of child at time of diagnosis
b) Interventions used with dyslexic students
c) Child's attitudes toward dyslexia
d) Teachers' attitudes towards dyslexia
e) Co-existing conditions with dyslexia
f) Discontinuing attendance in one school setting and enrolling in another school setting

4. What implications, if any, did the parents of dyslexic students' perspectives have for leaders and policy makers?

Significance of the Study

Parents are responsible for making decisions about their children's education. Dyslexic students have unique challenges in school settings. Limited research has been conducted on the parents of dyslexic students' perspectives of how public, private and home school environments impact their children with dyslexia. A review of the literature indicated that students with reading concerns are prevalent in all educational settings whether public, private or homeschool. The study's findings provide educational leaders and administrators with a better understanding of parents of dyslexic children's levels of satisfaction with their learning environment of choice. In addition, the study may provide guidance about the types of educational environments parents of students with dyslexia may be seeking for their children.

Theoretical Framework

The theoretical framework for the study was developed from a review of literature on parents' perceptions about dyslexia. The research review was organized into four components: (1) diagnosis of dyslexia; (2) attitudes about dyslexia among parents, teachers, and students; (3) treatment of dyslexia; instruction and accommodations, and (4) genetic link with dyslexia.

Evolved Definitions of Dyslexia

"Developmental dyslexia and its relationship to brain function are complicated topics that researchers have been studying since dyslexia was first described over a hundred years ago" (Hudson et al., 2007, p. 1). Sharma, Gothecha, and Ojha (2012) reported that:

> Dyslexia is one of the most common learning disabilities. It is defined as a disorder where a child, in spite of all the classroom teaching, is not able to attain the language skills of reading, writing, and spelling according to their level of intelligence. Dyslexic individuals often have difficulty in relating the association between sound and their respective letters. Reversing or transposing letters while writing is characteristic with letters such as b and d, or p and q, etc. The prevalence among school children is reported as 9.87% and in the selected families, it is 28.32%. Dyslexia significantly interferes with academic achievement or activities of daily life and are not primarily due to sensory, motor or mental handicaps. About 40% of dyslexics drop out of schools. (p. 486)

A widely accepted and current definition of dyslexia in the United States is that of Shaywitz, Shaywitz, and Lyon (2003):

> Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experiences that can impede growth of vocabulary and background knowledge. (p. 2)

Shaywitz et al. (2003) also stated that the term "learning disability" and/or "specific learning disability" was often used because of the 1994 definition of dyslexia:

> Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterized by difficulties in single word decoding, usually reflecting insufficient phonological processing. These difficulties in single word decoding are often unexpected in relation to age and to other cognitive and academic abilities; they are not the result of generalized developmental disability or sensory impairment. Dyslexia is manifested by variable difficulty with different forms of language, often including, in addition to problems with reading, a conspicuous problem with acquiring proficiency in writing and spelling." (Shaywitz et al., 2003, p. 2)

The following definition of dyslexia, was developed by the New Zealand Ministry of Education (2008):

> Dyslexia is a spectrum of specific learning difficulties and is evident when accurate and/or fluent reading and writing skills, particularly phonological awareness, develop incompletely or with great difficulty. This may include difficulties with one or more reading, writing, spelling, numeracy or musical notation. These difficulties are persistent despite access to learning opportunities that are effective and appropriate for most other children.
>
> People with dyslexia can be found across the achievement spectrum and sometimes have a number of associated secondary characteristics which may also need to be addressed, such as difficulties with auditory and/or visual perception; planning and organizing; short term memory; motor skills or social interaction.
>
> People with dyslexia often develop compensatory strategies and these can disguise difficulties. People with dyslexia can also develop compensatory strengths, which can provide an opportunity to further advance their learning. Early identification followed by a systematic and sustained process of highly individualized, skilled teaching primarily focused on written language, with specialist support, is critical to enable learners to participate in the full range of social, academic and other learning opportunities across all areas of the curriculum. (p. 1)

Tunmer and Greaney (2014) categorized dyslexia's definition into four key indicators:(1) persistent literacy learning difficulties (2) in otherwise typically developing students, 3) despite exposure to high quality, evidence-based literacy instruction and

intervention, and 4) due to an impairment in the phonological processing skills required to learn to write and read. Children who do not learn to read fluently by age 10 or 11 are often thought to be lacking in intelligence or motivation. In most cases, however, they are neither stupid nor lazy. They have dyslexia, a learning disability that makes it very difficult for them to understand written language, despite having a normal–or higher than normal–IQ. Depending on the diagnostic criteria used, dyslexia affects 5% to 17% of people in the United States. Early screening/testing of dyslexia would make it possible to provide appropriate and early remedial instruction in reading, writing and spelling; many experts suggest this would allow students with dyslexia to overcome their disability and learn to read at an acceptable level (Reading Rockets, 2006).

Youman and Mather (2013) stated that in most school settings in the United States the term "dyslexia" is not used; instead, the term Specific Learning Disability (SLD) is more common. In most school districts in the United States, special education teams are identifying students with dyslexia under the area of SLD. In other parts of the world, experimental reading classes were organized as early as 1953 in Germany. Klasen (1988) noted that public schools in Germany at that time were instructed to offer some, or all of, the following services:

- Individual or small group remedial help in the regular classroom or outside the classroom but within the student's regular school;
- Special remedial groups for students brought together from various schools;
- Self-contained special classes with a regular elementary school curriculum, but special education teachers and extra hours for remediation;
- Measures for screening and early interventions;
- Improved teacher training and more continuing education for teachers;
- Newly developed teaching methods and teaching materials;
- Special allowances in regard to grading; dictation not to be graded as long as student was attending a remedial program; oral work to be more heavily counted than written work; promotion to the next grade to be granted as long as only the

> reading and writing achievement remained comparatively low; a similar bonus was granted to students who applied for eligibility to college preparatory classes. (p. 24)

The International Dyslexia Association (IDA) conducted a strategic planning process in 2009 (Bowman, 2012). Bowman (2012) reported that the IDA would continue to reach out and support professionals, but that a paradigm shift was incorporated to reach out to parents as well. "With more than 20 million Americans struggling with learning disabilities and one in ten children struggling with dyslexia, IDA leadership knew they had to do more for parents" (p. 1). Bowman emphasized that many times when a parent is searching for answers and direction for their struggling reader, that parent can often feel overwhelmed, isolated and alone.

Delimitations of the Study

Delimitations are parameters or limits of the study established by the researcher (Roberts, 2010). Delimitations of this study include:

- The survey sample includes only parents of dyslexic students residing in Central Minnesota from September 2007 to December 2013. This delimitation was selected by the researcher due to the accessibility of respondents.
- The survey sample is of parents of dyslexic children in Central Minnesota and may not reflect viewpoints of similar parents in other geographic regions
- Data were collected through a survey which respondents may or may not have chosen to fully complete.

Organization of the Study

The study is presented in five chapters. Chapter 1 contains an introduction of the study, statement of the problem, purpose of the study, research questions, significance of the study,

theoretical framework, definitions and limitations of the study. Chapter 2 presents a review of the related literature as it pertains to four components of dyslexia: diagnosis, attitudes, treatment and genetics. Chapter 3 presents methodology employed in conducting the descriptive study. Chapter 4 details the study's findings, and Chapter 5 describes conclusions and practical applications for educational leaders and future research.

Chapter 2: Review of Related Literature

Limited research has been conducted on parental perspectives of public, private and home school environments, impacting students with dyslexia. In this literature review, pertinent research related to dyslexia in school environments is presented. The purpose of this literature review is to provide the reader with (a) the background and context of dyslexia, and (b) parent perspectives of public, private and home school environments in educating students with dyslexia. To that two-fold aim, the research is organized into four sections: diagnosis; attitudes of parents, students and teachers; treatment; and the genetic link of dyslexia.

A wide variety of techniques were used to identify and to locate materials for this review. The ERIC and EBSCOhost databases were searched. Membership through the International Dyslexia Association provided online access to all Annals of Dyslexia publications. The descriptors used to define the search fields were dyslexia, parents, questionnaire, survey, treatment, attitudes, diagnosis, familial link, genetic link, private schools, public schools and homeschools.

Diagnosis and Co-existing Factors

Research published in the current issue of the *American Journal of Neuroradiology* provides evidence that dyslexia is a brained-based disorder. Scwartz (1999) describes dyslexia as a brain-based disorder and that it is the most common of the learning disabilities (p. 1). Yet, the diagnosis of dyslexia is often an emotional issue (Firth, Frydenberg, Steeg, & Bond, 2013). Although dated, Hartwig's (1984) statement still holds true today, "In my view, while dyslexia is not an illness, the parents and child react as if it were, and to that extent" (p. 314).

There are many risks factors of developmental dyslexia (DD). Donfrancesco et al. (2010) found that students identified with DD were more frequently male and had a younger mean age when they entered school for the first time (p. 175). Since 1965, the National Institute of Child Health and Human Development (NICHD) has conducted research on reading acquisition and development of students. The NICHD reported that public schools identify four times as many boys as reading disabled (Lyon & NCLD, 1999). Donfrancesco et al. (2010) suggested that the strong association between young students at school age entrance and DD may be caused by gender differences:

> Whether school policy is oriented to anticipate the school entry, a closer detection of early learning disorders and associated risk factors, such as familial load, specific language disorders, and/or attention deficit hyperactivity disorder should be warranted for prevention and/or timely treatment of these disorders at their presentation. (p. 181)

Lawrence and Carter (1999) reported that many teachers are concerned about identifying and assessing dyslexic students in schools, but constraints on time are an obstacle. Lawrence and Carter argued that, "In the last ten years dyslexia has moved from being a hidden disability to one that is acknowledged in academic, intellectual and professional fields, through advanced genetic and psychological testing" (p.107). The study conducted by Lawrence and Carter (1999) explored whether classroom teachers perceived the Dyslexia Screening test as a useful tool for the identification of 7- to 8-year-old pupils who were at risk of dyslexia. Each of the tests indicated positive outcomes for dyslexia, but did not involve lengthy intelligence tests which had been traditionally implemented. Lawrence and Carter (1999) shared that the results of the study were encouraging because, "Non-recognition can lead to severe problems for a pupil in school and in later life, as well as for teachers" (p. 107). Nonetheless, Snowling, Duff, Petrou, Schiffeldrin, and Bailey (2011) found that though

teachers can identify risk of dyslexia, the accuracy of this process can be improved. Snowling et al. (2011) concluded, "teachers using criterion-referenced assessments are as good judges of pupils' progress as are most formal reading tests" (p. 166).

Some researchers have begun to identify dyslexia at an extremely early age. Zuijen, Plakas, Maassen, Maurits, and Leij (2013) recorded speech-sound processing of 2-month old infants. Two groups of infants, those at-risk of dyslexia and those not, were followed in a longitudinal study. They were given a word reading fluency test in second grade. Twenty-six infants in the at-risk group had a parent and a close relative with dyslexia and 12 healthy control group infants without dyslexia were studied. Zuijen et al. (2013) investigated "whether speech-sound processing in the infant brain is compromised in those children who become non-fluent school-age readers" (p. 560). The study showed that children who could read fluently in second grade from both groups processed speech sounds differently as 2-month old infants. The results of Zuijen et al. (2013) showed that at the very early age of 2 months, measures can be administered to discriminate children at-risk of dyslexia becoming fluent readers from those who will become non-fluent readers (p. 560).

Blomert and Willems (2010) hypothesized that there is a causal link between a phonological awareness deficit and reading failure. Blomert and Willems felt that this theory was widely accepted, but that it was unproven. The results of the study of kindergarten and first grade students with and without familial risk of dyslexia revealed no support for the theory that a preceding phonological awareness deficit caused reading difficulties. However, the main findings of the research revealed that, "44% of the children with familial risk for

dyslexia developed a reading deficit in first grade, whereas only 9% of the control children did so" (Blomert & Willems, 2010, p. 312).

Other researchers have found that dyslexia can be predicted at age 5 with a questionnaire. Helland, Plante, and Hugdahl (2011) designed a questionnaire that was given to 120 caregivers of 5-year-old children. Based on questions pertaining to dyslexia, an at-risk group and a matching control group were formed and followed until the students were age 11; and the questionnaire and literacy tests were given again. Half of at-risk children and two of the control group children had been diagnosed with dyslexia at age 11 (Helland et al., 2011). The results of this study indicate that dyslexia can be predicted before students enter kindergarten. Helland et al. (2011) found that their questionnaire was reliable across both the parent and teacher responders. Leaders in schools across the country could predict dyslexia earlier and therefore, could provide early intervention for students. Helland et al. discussed that predicting dyslexia at age 5 is promising and "finding these children ahead of school age could open up for interventions during the period when children are expected to be most sensitive to literacy training" (Helland et al., 2011, p. 222).

Dyslexia is a lifelong disability; most individuals continue to experience problems related to reading and writing throughout their adult lives (International Dyslexia Association, 2001). When identifying students with dyslexia in higher education, some authors confirmed that it is not necessary to administer a wide range of tests. Tops, Callan, Lammertyn, Van Hees, and Brysbaert (2012) suggested that when identifying dyslexia, "…three tests sufficed; word reading, word spelling and phonological awareness" (p. 186). Tops et al. (2012) surmised this was because "higher education students with dyslexia

continue to have specific problems with reading and writing" (p. 186). Kirby, Silvestri, Allingham, Parrila, and La Fave (2008) found that postsecondary students with dyslexia have a different profile of strategies than their peers without dyslexia, even though dyslexic students have partially compensated for their weaknesses (p. 94).

"Comorbidity among developmental disorders such as dyslexia, language impairment, attention deficit/hyperactivity disorder and developmental coordination disorder is common" (Gooch, Hulme, Nash, & Snowling, 2014, p. 237). According to Gooch et al. (2014), weaknesses in attention, executive function and motor skills were associated with language impairment. Their study of 112 preschool children with family risk of dyslexia indicated that the 29 children who also met criteria for language impairment had significant and persistent weaknesses in motor skills and executive function, compared to those without language impairment.

Germano, Gagliano, and Curatolo (2010) also found comorbidity frequent between attention deficit hyperactivity disorder (ADHD) and reading disorder (RD). Students with both ADHD and dyslexia show a neuropsychological profile plagued with failing cognitive functions. Comorbid RD may be a "market for a group of children with ADHD with more severe cognitive deficits, and a worse neuropsychological, academic, and behavioral outcome" (p. 475). Gerrmano et al. (2010) suggest that overall patterns of research indicate that RD and ADHD are both related to weaknesses on many neurocognitive domains. Difficulties with information processing, memory functions, and cognitive speed were areas of significant weakness in students with comorbid RD and ADHD. Other researchers, like Field et al. (2013) concluded that "…dyslexia genes with relatively major effects exist, are

detectable by linkage analysis despite genetic heterogeneity, and show substantial overlapping predisposition with ADHD and autism" (p. 56). Field et al. (2013) suggest that their research does not suggest a 'dyslexia gene' as much as the search for 'neurodevelopmental genes' that may be underlying a variety of conditions related to dyslexia (p. 67).

Willburger and Landrel (2010) found that dyslexic students have a history of demonstrating impairment on a variety of sensory tasks. A controversial question is whether perceptual deficits are related to reading disorders or if association with a brain difference is the cause. In their study measuring the specificity of the anchoring deficit for dyslexia, they found that poor readers only had difficulties when they had limited attention skills. Dyslexic students with good attention were not affected.

As prior noted, research has affirmed dyslexia is often found to co-exist with other conditions. Daniels (1996) found a seemingly paradoxical coexistence of dyslexia and artistic talent, while examining the lives of two artists through a case study. Daniels questioned whether dyslexia could be explained as a visual deficit, and whether the visual abilities needed to read are different than those needed to create art. One of the artists graduated from Yale, and the other found success creating art with deep social and psychological significance–although she reported being called "stupid, dumb, and retarded" (Daniels, 1996, p. 1).

The perceived stigma that accompanies dyslexia could result in non-disclosure of the diagnosis. Morris and Turnbull (2006) found this to be true when studying nursing students with dyslexia in the United Kingdom. The nursing students in this qualitative exploratory

study found personalized ways to manage their dyslexia. Some of the participants feared "discrimination and ridicule" and chose not to disclose their dyslexia (Morris & Turnbull, 2006, p. 238).

Another study, conducted by McKendre and Snowling (2011), included medical students. McKendre and Snowling (2011) found that a variety of assessment tools should be included for all medical students, not just those with dyslexia (p. 176).

Singleton, Horne, and Simmons (2009) found that although identifying dyslexia in adulthood can be challenging (because of complicating factors such as acquisition of compensatory strategies, differing length and a variety of interventions), not all individuals with dyslexia are identified in childhood (p. 137). Singleton et al. (2009) used non-traditional approaches to screen adults for dyslexia. Using three different computer delivered measures on 70 dyslexic and 69 non-dyslexic adults from three different educational institutions, Singleton et al. (2009) found that the groups were significantly different, and that adaptive versions of all these tests could be administered in 15 minutes (p. 137). Singleton et al. (2009) concluded that this approach is "a valid and useful method of identifying dyslexia in adulthood, which given the ease of administration to large numbers of adults, has noted advantages for education and employment" (p. 137). Other researchers such as Nelson and Gregg (2012) found that college students with ADHD, dyslexia or ADHD/dyslexia did not significantly differ in self-reported symptoms of anxiety and depression when compared to peers without dyslexia and/or ADHD. These research findings contrast other research and Nelson and Gregg (2012) suggested that those particular college students "…likely have experienced more academic success…and their pursuit of postsecondary education may

suggest a belief in their abilities to overcome obstacles resulting from their disorder and a high degree of resiliency" (p. 250).

Deacon, Cook, and Parrila (2012) conducted research on the identification of high-functioning dyslexics. Their study explored how self-reporting reading problems compared between elementary students and university students with dyslexia. Deacon et al. (2012) documented that nearly a quarter of children diagnosed with dyslexia compensate for their difficulties to the point that their word reading accuracy is measured in the normal range (p. 120). Word and non-word reading fluency, phonological awareness and reading history were assessed using three different groups. The study consisted of university students who had recently been diagnosed with dyslexia, university students who reported no reading acquisition problems and university students who self-reported reading acquisition difficulties during elementary school. The participants in the self-report group scored very similarly to the students in the recently diagnosed group in word-level reading, phonological awareness and reading comprehension (p. 133).

Attitudes and Implications

"Dealing with learning disabilities or other handicaps creates reactions in those affected as if a serious illness were present…had I known years ago the impact that dyslexia can have on families, I think I would have become a better parent, or at least I could have reduced friction and anxiety at home" (Hartwig, 1984, p. 314). Attitudes of parents, students and teachers impact how dyslexia is perceived and subsequently, handled. For example, even though a dyslexia diagnosis from a qualified professional is insightful for the parent, the diagnosis may not result in parents accessing further services from a school setting. Bouchard

(2011) reported that a diagnosis of dyslexia had no impact in accessing treatment from the school. In Bouchard's (2011) study, the parents decided that "homeschooling became the best option to provide specialized education for their children" (p. 1).

Gwernan-Jones and Burden (2009) pointed out, that it is highly likely that a teacher's strength in working with dyslexic students will be affected by their attitude toward, and knowledge of, teaching challenges associated with dyslexia. Their study surveyed 87 pre-service teachers on their attitudes towards dyslexic students, which were measured and compared at two separate occasions. Taken as a whole, their findings provided strong evidence that there were positive attitudes for an overwhelming number of the pre-service teachers. Gwernan-Jones and Burden (2009) found that although pre-service teachers had confidence in supporting students with dyslexia, most felt they needed additional training, especially in learning additional interventions to help these students.

Gwernan-Jones and Burden (2009) were not the only researchers who studied the attitudes of pre-service teachers toward dyslexic learners. Woodcock and Vialle (2011) warned that educators must be cognizant of their attributions, as they can actually reinforce feelings of incapability and incompetence among students with learning disabilities (LD), compared to their non-dyslexic peers. Woodcock and Vialle (2011) added that the importance of understanding the indirect messages that educators send to their students with dyslexia will impact their achievement.

In a Greek study, Rontou (2012) used activity theory to analyze the contradictions that emerge around differentiating students with dyslexia. Frustration was evident by "lack of teachers' knowledge, inadequate diagnosis, unclear school and Ministry policy, short duration

of lessons and the number of pupils in class" (p. 140). The findings of this study suggest the necessity of additional teacher training in dyslexia and the improvement of school and Ministry policy. Glazzard (2010) found that students perceived support from teachers differently:

> Some students emphasised the importance of teachers understanding their individual needs. Others stressed the importance of teachers making adaptations to their normal classroom practice and being flexible in their approach. Students above all emphasised the importance of developing effective relationships with their teachers so that they had someone to talk to. (p. 66)

Tops, Verguts, Callens, and Brysbaert (2013) compared the personality profiles of students with dyslexia in higher education with those of their non-dyslexic peers. They concluded the following:

> These students seem to have more resilience to deal with the extra challenges they are confronted with than the doom scenarios sometimes portrayed. At the same time, we agree that our findings are limited to those students who start studying in higher education. Only a prospective, longitudinal study can inform us about implications of dyslexia (and other learning difficulties) on personality for the full range of abilities. (Tops et al., 2013)

Riddick (1995) interviewed 22 dyslexic children between 8 and 14 years of age and their mothers. The main focus of the interviews was to understand how children and their families addressed issues of living with dyslexia. Riddick (1995) found that it was not the reading itself, but rather a predominant concern with written work and spelling struggles. The mothers were interviewed regarding the perceived role of their child's teacher in raising or lowering the self-esteem in their child (p. 63). "Although all the children in this sample had been struggling with literacy since starting school…the mean age at which they were diagnosed as dyslexic was ten years" (Riddick, 1995, p. 71). Out of the 22 children, 15 said that prior to having the dyslexia diagnosis they thought they were "'stupid', 'thick' or an

'idiot'" (Riddick, 1995, p. 71). Another researcher, McNulty (2000) studied the life course of individuals with dyslexia. Recurring themes in his interviews were expressed by the words, "Something's wrong with me" (p. 1).

Marazzi (2011) reported that dyslexia often comes with great student strengths that are not recognized by schools:

> The personal and professional histories of dyslexic achievers, the successful dyslexics interviewed by *Fortune*, reveal that this specific learning disability (SLD) is in fact a virtue, a talent that schools and institutions–the dominant language system, are unable to understand and value. The personal histories of dyslexic managers allow them, on the other hand, to maintain that their professional success is not due to nominally effective processes of therapeutic normalization (that is, in spite of their SLD) but to the fact that their "gift" could be put to use thanks to the specific nature and functioning of the new economy. What was considered a linguistic handicap and a pathology less than a generation ago is potentially a 'competitive advantage' for digital capitalism. (Marazzi, 2011, p. 19)

Falzon and Camilleri (2010) studied the topic of whether Maltese counselors were able to deal with dyslexic clients. The counselors were asked to list the reasons why clients were referred to them. The main reasons for referral were self-esteem and sadness (p. 310). With regard to counseling students with dyslexia, the Falzon and Camilleri study suggested:

- Never underestimate the cognitive profile of a client.
- Do not be biased by scruffy or infantile handwriting.
- Do not be biased by spelling errors or sentence construction challenges.
- Allow for lack of sequencing and organization in language.
- Take into account auditory sequential short-term memory challenges by using visuals.
- Ensure that instructions are supported by visuals.
- Keep writing as concise as possible, always write in a large font and write clearly preferably in manuscript.
- In conversation, use pauses and pace talking to allow for language processing.
- Ensure that what is said is being registered.
- Value learned helplessness and deal empathetically and practically with this issue.
- Never take stories of frustration, anger and embarrassment lightly and do not be negatively influenced by such stories.

Bryant (1978) stressed that feelings of failure bred other feelings as well, those of uncertainty and self-doubt, shame, guilt, rage and despair. Whatever the feelings, they are not of optimal mental health. Students with dyslexia often, "seek solace and escape in withdrawal and in a variety of addictive habits" (p. 9). Students who are unable to deal with their frustration and their rage may act out with destructive and aggressive behavior that could lead to dealings with the courts and correctional institutions (Bryant, 1978, p. 9). Bryant added that students with dyslexia live with despair. The child blames himself for his failure to learn and accuses himself of "being bad and lazy" (p. 13). Kline and Kline (1973) argue that "Next to fearing loss of a parent or parents, the child's greatest fear is that he will fail at school" (Kline & Kline, 1973, p. 154). Parents of the child with learning disabilities have a fairly high rate of divorce and separation. The security of the child and the stability of the family are at high risk of constant crisis (Bryant, 1978). Earey (2013) conducted qualitative research with seven parents of dyslexics from England. The findings suggested that "while we live in an age of purported inclusion and equality, there are still children who experience exclusion and prejudice in education…their parents are suffering too" (Earey, 2013, p. 35). Kline and Kline (1973) reported that parents over 40 years ago "are refusing to accept the blame for failure to teach their children to read" (Kline & Kline, 1973, p. 151).

Dyslexia Treatment

"Learning to read is critical to a child's (and an adult's) well-being" (Lyon & NCLD, 1999, p. 1). Lyon and NCLD (1999) argues that the child or adult who cannot read at a 'comfortable level' experiences significant difficulties. They are at-risk for failing at school

and are often not reaching their full potential in vocational and occupational settings. Cox (1983) stated that one in five children will need special reading instruction. Cox explained:

> Most children (approximately 80 percent) do not seem to be dependent on sequential, logical, precisely organized teaching. Their left-brained talent for processing two-dimensional language symbols, their in-born photographic memories, include innate organizational and decoding skills which students seem to utilize subconsciously, whether or not the teacher follows a concise program. Even non-phonetic basal reader series effectively enables them to learn to read, with varying levels and intensity of effort, depending on individual aptitudes.
>
> The dyslexics (who make up a large portion of the remaining 20 percent of any class) are very imaginative, creative, intuitive thinkers. Their talents are predominantly right-brained, 3-dimensional, real-world oriented, and they are, by nature, less able to sort out and retain information processed through the two dimensional symbols of language. Their very gifts seem to interfere, to block their internal awareness of the order and reliability of English, to prevent their independent discovery of the symbol structure and sequence necessary for language mastery. Whatever the reason, the teacher who seeks to help these students of any age to achieve permanent mastery and ultimate academic achievement will succeed, we find, only through a precisely sequenced program. Teachers can succeed in reaching every kind of learner if they: utilize multi-sensory techniques in teaching, synthesizing phonics and in presenting all new learning; deliberately inject logic and sequence; lead students to discover prevailing concepts through Socratic questioning; coach, foster, and encourage confidence; and demonstrate (through criterion-referenced testing of precise skills) that permanent progress has been made and pre-delineated goals achieved. (Cox, 1983, pp. 221-222)

Although there are many documented treatments for dyslexia, there are researchers who have found that very few dyslexics are receiving instruction in the public schools through special education. Catone and Brady (2005) analyzed Individual Education Plans (IEPs) of 54 students who were receiving special education services in the area of basic reading skills. The results of this study showed that 73% of the students did not have any objectives regarding their difficulties with attaining any reading skills. A further look at the research showed that the majority of the IEPs (56%) only addressed reading comprehension and “lacked any specification of treatment recommendations or outcome goals in the areas of decoding or

word recognition for these students with noteworthy deficiencies in those reading skills" (Catone & Brady, 2005, p. 64).

In a document prepared for the Keys to Successful Learning Summit, it was argued that an important factor impeding effective instruction with struggling readers is current teacher preparation practices (Lyon & NCLD, 1999). The National Center for Learning Disabilities, in partnership with the Office of Special Education Programs, state that "many teachers have not had the opportunity to develop basic knowledge about the structure of the English language, reading development, and the nature of reading disabilities" (Lyon & NCLD, 1999, p. 7).

Ogden, Hindman, and Turner (1989) followed the progress of a group of elementary Specific Learning Disabilities (SLD) students for a 3-year period, as they were instructed using a multi-sensory reading approach: Alphabetic Phonics (AP) curriculum. After this 3-year period, the AP curriculum produced positive results as the students' teachers reported overall improved word attack, as well as improved oral and silent reading skills. The U.S. Department of Education in their document, What Works Clearinghouse, describes Orton-Gillingham-based strategies as a "broad, multi-sensory approach to teaching reading and spelling that can be modified for individual or group instruction at all reading levels… with auditory, visual, and kinesthetic elements reinforcing one another" (U.S. Department of Education, 2010, p. 1). The National Institute of Child Health and Human Development (NICHD) research does not support using context clues in-text for applying decoding strategies to unfamiliar or unknown words (Lyon & NCLD, 1999). Lyon and NCLD (1999)

states that most words can only be "predicted 10 to 20 percent of the time" (Lyon & NCLD, 1999, p. 7).

Due to the lack of identification and knowledge of dyslexia, many unfounded concepts in the treatment of dyslexia are often imposed. Bull (2009) found that the most common unfounded treatment for dyslexia was nutritional supplements and special diets. This approach is often referred to as "Space Dyslexia" (Stephenson, 2009). Bull (2009) stated that leaders in schools should be aware of this to assist parents in making sound educational choices for children. Stephenson (2009) examined the "Space Dyslexia" theme and its attraction for parents, as well as why those parents continue to seek this alternative treatment despite a lack of evidence to prove its effectiveness. Stephenson (2009) stressed the following:

> If those professionals who are knowledgeable about interventions and therapies are unable to reach ordinary families with balanced advice on proven therapies, families will take advice from the genuinely misguided or fraudulent practitioners who can publicize their approaches. There seems to be a need for parent organizations to promote more critical thinking and to be more direct in challenging faulty and untrue concepts that may underpin ineffective interventions. There is also a responsibility for researchers in the field to remain abreast of popular theories and interventions as well as those emerging from empirical research, and to offer critiques that are accessible to professionals and interested families. It is not enough for researchers and professionals to debunk unproven interventions and contentious theories; they need to offer clear descriptions of effective strategies. (p. 45)

In affirmation of Stephenson's (2009) point, many other researchers agree that clear treatment of dyslexia is needed. Saunders and Malin (1970) argued that although it was once thought that parents could not be a part of necessary treatment, this is no longer the case. They state that there have been language therapists who have been successful in assisting parents in teaching their children through planned programs (Saunders & Malin, 1970).

Saunders and Malin (1970) emphasized, “The interpersonal relationship between parent and child seemed strengthened since there was something definite and positive on which a parent and child could focus in overcoming the known problem” (p. 100). Other researchers, Ladd, Martin-Chang and Levesque (2011) found that although parents reading storybooks to their children with dyslexia did not develop increased reading decoding skills, it did have a significant impact on receptive and oral expression growth (p. 211).

Nonetheless, Richardson (1996) believes that, “Without appropriate changes in teacher preparation it is doubtful that inclusion in regular classrooms will provide much educational benefit for the dyslexic population in our schools.” (Richardson, 1996, p. 37). Richardson (1996) contended that inclusion of dyslexic students can only be successful if the Colleges of Education redesign teacher evaluation (p. 38). Richardson (1996) suggests “modify curriculum and methods for teaching the basic skills. Multi-sensory, structured language education should be provided for all at-risk and diagnosed dyslexic children at least from preschool through the first four grades” (p. 46). Orton-Gillingham treatment for dyslexia has an encouraging prognosis. Klasen (1988) reports on this multi-sensory treatment:

> This is the most positive aspect of dyslexia: improvement almost always takes place and sometimes it even goes beyond the most optimistic expectations. On the average, we found, two years of individualized curative instruction, at the rate of one 60-minute session per week, offered by an experienced therapist, will bring the student back up to his regular classroom level. Some aspects of these gains may be objectively measureable, as the psychometric testing; others, such as the prevention of failure, addiction, unemployment, illness, institutionalization and the opening of unobstructed avenues to the future, all make the endeavor worthwhile and rewarding. (p. 30)

Understanding a possible reason why they find something difficult (that no one else seems to struggle with) may help relieve some of the mystery and negative feelings that many people with a disability feel. Sharing knowledge of brain research may demystify dyslexia and help students and their parents realize that language processing is only one of many talents that their children have, and that they are not "stupid"–they simply process language differently than their peers.

There has been increased attention given to the influence of traditional school and specialist school settings on the emotional well-being and self-esteem of students with dyslexia. Nalavany, Carawan, and Brown (2011) explored how the educational experiences of these students impact the self-esteem and emotional health on these same students in adulthood (p. 191). Nalavany et al. (2011) recognized an overall consensus that dyslexia is best treated in independent or specialist school environments, but their study focused on the self-esteem of those individuals as measured in adulthood (p. 191). The web-based survey of adults with dyslexia had the purpose of identifying the experiences that decrease the chances of adults with dyslexia living successful and fulfilling lives. Nalavany et al. (2011) found that students that attended traditional schools (26.4%) were significantly more likely to have a current diagnosis of anxiety and/or depression, as compared to individuals who attended specialist schools (14.7%). Graduates of specialist schools shared that they have less emotional distress with regards to their dyslexia, while having higher levels of self-esteem (p. 195). Nalavany et al. (2011) concluded that "The findings in this adult-focused study are consistent with the conclusions of previous research cited in the literature review which

contends that attendance at a specialist school enhances the socio-emotional adjustment of children with dyslexia (p. 196).

Nalavany et al. (2011) agree with previous research that the challenge for traditional schools is to create an environment where the students feel valued and secure, "while receiving an education from specially trained teachers who are prepared to meet the educational, social and emotional needs of students with dyslexia" (p. 197). Schwarz (1999) further claims, "We can't blame the schools or hold the teachers accountable for teaching dyslexic children unless both teachers and the schools are given specialized training to deal with these children" (p. 1).

In the paper, *Coping with Dyslexia in the Regular Classroom: Inclusion or Exclusion,* Richardson (1996) makes five recommendations for students with dyslexia in the regular classroom. The fifth recommendation is to "Modify curriculum and methods for teaching the basic skills. Multisensory, structured language education should be provided for all at-risk and diagnosed dyslexic children at least from preschool through the first grade" (Richards, 1996, p. 46).

Firth et al. (2013) designed a dyslexia coping program entitled, *Success and Dyslexia*, and implemented the program in two primary schools in the United Kingdom (p. 113). Contrary to the expectations of Firth et al. (2013), there were no significant differences between students with and without dyslexia on any measures during the baseline of the study. Perceived control, coping, well-being and school engagement for students with and without dyslexia who received the intervention showed significant and sustained improvement in locus of control for students with and without dyslexia. Firth et al. (2013) reported that school

connectedness decreased over time for both students with and without dyslexia. Firth et al. asserted that this is not unexpected as school connectedness often decreases for all students as they get older (p. 122). Firth et al. (2013) added that, "It is possible therefore that students who have dyslexia do not develop less adaptive coping strategies and a more external sense of control until they reach the more challenging environment of secondary school" (p. 123).

Although most studies of dyslexic interventions focus on outcomes related to literacy, there are some studies that focus on the cost of educating severe dyslexics. Hakkart-van roijen, Goettsch, Ekkebus, Gerretsen, and Stolk (2011) used a tool that compared cost and effects of medical and non-medical treatment of dyslexia. The results of their study argued that there is evidence that treatment of severe dyslexia is cost effective when designated protocol is followed (p. 257). Another researcher, Moores (2004) suggested that "…a relatively small number of basic deficits…are manifesting themselves in other ways, thereby creating the illusion that children with dyslexia are seemingly poor at a wider variety of tasks than is actually the case" (p. 296).

Moores argued that only looking at the deficits in dyslexia should be reversed to teaching to a child's strengths (p. 296). Bryant (1978) emphasized that, "…there are no doubt at least one or two children with learning disabilities in every classroom, only if every classroom teacher is equipped to teach them by alternate methods can their needs be served appropriately" (p. 12).

Crochet (1998) found that dyslexic college students "had learned to compensate for their poor spelling ability through invented spelling, and the use of the computer and the spell checker" (p. 1). The initial purpose of the qualitative study (Crochet, 1998) focused an Orton-

Gillingham remediation program they had received in younger grades and the effect the program had on students in the college setting.

Another study examined seven Swedish current and former students of higher education. Brante (2013) interviewed and examined the tools that these seven dyslexics used to succeed in a higher education setting. Brante (2013) observed that most higher education institutions had policies to support students with dyslexia, but that such policies meant to fit everyone may not be the best fit for each individual with dyslexia (p. 79). Brante's study clearly showed the importance of teaching persons with dyslexia using an individual approach. "Even though the diagnosis of dyslexia has one common name, its effects vary for different students" (p. 84). Students with dyslexia graduating from high school and entering the higher education environment are assured services by Section 504 of The Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (Hadley, 2007). Hadley (2007) emphasized that there is a requirement for these students to advocate for themselves. Examples of accommodations that may assist students with dyslexia include, but are not limited to "the use of readers, note-takers, extra time to complete exams, course registration, and/or alternate test formats" (Hadley, 2007, p. 10).

In Ireland there are four special schools for students with dyslexia. Three are located in Dublin and one is in Cork. The special schools are commonly called 'reading schools' and students who are assessed with severe dyslexia (at least average IQ and at the 2nd percentile or below in reading achievement). According to McPhillips and Shevlin (2009) students attend these schools for 2 years and then return to their mainstream schools. The pupil to teacher ratio is 9:1 (p. 64).

Spear-Swerling and Brucker (2004) examined the basic reading knowledge of novice teachers and the progress of students who were being tutored by them. Pre-service teachers, many who had experience teaching, lacked knowledge of basic word structure. After receiving instruction on word structure, the teachers were supervised while teaching students for 1 hour a week using a direct, multi-sensory reading approach. Overall, students with reading disabilities showed the greatest improvements in areas where they were more focused in their tutoring. The students made gains in reading real and nonsense words, which suggested that they were acquiring decoding skills and not just using memorization.

Biasotto (1993) found that a multi-sensory reading instruction, such as an Orton-Gillingham approach works because of three reasons. Biasotto states:

> The Orton-Gillingham approach works for them because it is: (1) alphabetic, letters and their sounds form the basis for all reading and spelling; (2) multi-sensory, all senses are linked to teach sound-symbol relationships; and (3) sequential, as each new phonogram is taught it is blended into previously learned phonograms to form syllables and words. (Biasotto, 1993, p. 261)

McPhillips and Shevlin (2009) reported that parents of Irish students enrolled at special reading schools report improved attitudes toward reading and saw benefits of their child attending the special school (p. 68). The students interviewed in the study also reported preference for the teaching methods used in the special schools (McPhillips & Shevlin, 2009, p. 68).

McKendre and Snowling (2011) argued that "…dyslexia is by no means incompatible with a successful outcome in higher education, given an appropriate level of commitment on the part of the students and an appropriate level of resources on the part of their institution"

(p. 181). McKendre and Snowling's research on medical students with dyslexia emphasized that students with dyslexia can succeed in higher education including medical school.

Books that are read to them as young children may influence the attitudes of young students with dyslexia. Altieri (2008) reviewed 72 children's books. Altieri suggested that educators choose books to read to their students with dyslexia that are both positive and realistic. Good quality literature, with characters that are dyslexic, could lead to a better understanding and positive outlook for students with dyslexia (p. 54).

Brooks (2001) worked with children and adolescents for 30 years. He expressed that he is keenly aware of the feelings of low self-worth and incompetence in dyslexics. What makes matters worse, many of these students believed that their situations would not improve. If that is the case, students are more likely to engage in, "self-defeating ways of coping such as quitting or avoiding tasks, blaming others for their difficulties, or becoming class clowns or bullies. Thus, a negative cycle is often set in motion, intensifying feelings of defeat and despair" (Brooks, 2001, p. 9). Brooks (2001) had suggestions for educators:

> I believe that the mindset of the effective educator is motivated to help all students feel special and appreciated. We can accomplish this by being empathetic, by treating students in the same ways that we would want to be treated, by finding a few moments to smile and make them feel comfortable, by teaching them in ways they can learn successfully, by taking care to avoid any new words or actions that might be accusatory, by minimizing their fears of failure and humiliation, by encouraging them, and by recognizing their strengths. When we achieve these steps, we truly will become their "charismatic adults." We will have touched their hearts and minds, and in the process, they will learn from us and take the gifts of knowledge, acceptance, and resilience into their adult lives. What a wonderful legacy the effective educator bestows to the next generation. (p. 20)

Bouchard (2011), a researcher who completed a qualitative study on parents who homeschool their children and teach their children how to read, found self-doubt a common characteristic

among parents. Getting advanced educational training did not decrease this stress and frustration, although homeschooling was found to be an option to meet the educational needs of dyslexic children (p. 1).

Glazzard (2010) investigated factors that affect self-esteem in nine students with dyslexia. The interview-based study identified the role of self-esteem in factors such as: peer comparison, the impact of teachers, other students and family members. Glazzard (2010) concluded that the diagnosis of dyslexia was, "a turning point in terms of building up confidence, self-concept and self-esteem…" (p. 68). Prior to their diagnosis, eight of the nine students compared themselves to other students. Although these comparisons varied, they often led to "feelings of being stupid, disappointed or isolated" (p. 64). Glazzard (2010) found that having a dyslexia label provided the students with a reason for their struggles in reading and spelling. These feeling are illustrated by the comments of one of the students:

> 'I'm more confident now that I know that I'm dyslexic. It was a turning point for me. If someone gives me a piece of work to do, I try harder. If someone made fun of me I'd explain to them that I have dyslexia and pretty much keep cool. I see myself as fine. I've got lots of friends and I'm happy. I really wouldn't like not to be dyslexic.' (p. 67)

Glazzard (2010) found that the diagnosis of dyslexia "…should not be underestimated. The need for an early diagnosis is therefore crucial in order to stop children from developing learned helplessness" (p. 68).

Karande and Kuril (2011) found that the impact of parenting practices on parent-child relationships in students with dyslexia can be improved through 'positive' parenting strategies. Karande and Kuril (2011) found that the challenges that exist in students with dyslexia go far beyond academic concerns. Karande and Kuril (2011) stated that dyslexia can

lead to “affect disorders, a sense of loneliness, low self-esteem, high levels of anger and aggression” (p. 29). Karande and Kuril’s study reveals that dyslexia is often associated with negative life outcomes, such as “school dropout, juvenile delinquency, unemployment, social isolation and mental health problems” (p. 29). Mautner (1984) asserted that, “we need to continue to inform both educators and parents that dyslexia is real and that there is no cure. We all need to work together to recognize, not cover up dyslexia” (p. 311). Parents who responded to open-ended questions in research conducted by Long and McPolin (2009) stressed that there was a sense of frustration from each of the parent responders, feelings of being unheard or misunderstood.

Genetic Link

Dyslexia seems to run in families (Cox, 1983). Van Bergen, De Jong, Plakas, Maassen, Van der Leif (2012) asserted that “There is a fair amount of evidence to support the observation that dyslexia tends to run in families” (p. 28). Van Bergen et al. (2012) conducted a study of Dutch children who differ in familial risk (FR) for dyslexia concerning literacy and its underlying cognitive difficulties. Three groups of students were studied at the end of second grade in the areas of naming, phonology, spelling, word and pseudo word reading. The FR students with dyslexia were severely impaired in each area. The FR students without dyslexia performed better than the FR students with dyslexia, but lower than the students in the control group–except for in the area of rapid naming, which was at the same level. Other researchers, Field et al. (2013) stressed that, “If genetically at-risk children could be identified prior to onset of language difficulties, long-term sequelae could be largely prevented by early educational intervention” (p.56).

Other researchers have studied genetically at-risk students for dyslexia. Koster et al. (2005) studied two groups of 17-month-old Dutch toddlers, and followed them for a decade. After the initial analysis of total vocabulary production, the children were divided into groups according to number of words produced. The children in the at-risk group for dyslexia scored below the control group in early word production (p. 436).

Additionally, Torppa, Eklund, Bergen, and Lyytinen (2011) examined whether the literacy skills of parents with dyslexia are predictive of their children's third grade reading and spelling skills. Torppa et al. (2011) suggested that attaining information on parents' literacy skills may be "valuable in assessing early on their child's liability to dyslexia" (p. 339). Eklund, Torrpa, and Lyytinen (2013) added to their research and found that the majority of children with reading disabilities had familial risk for dyslexia.

Snowling, Muter, and Carroll (2007) found similar results with 12-13 year olds in a joint study by the University of York and the University of Warwick. This was a follow-up study of students who participated in previous studies at ages 3, 6, and 9 years old. The study of these early adolescents showed 42% of the 'at-risk for dyslexia' group had impairments in reading and spelling impairments. One parent from each of the families participated in an interview that documented family literacy and the parent's and child's behavioral, emotional and overall mental health. Indications that their child's learning difficulties impacted the entire family was positive at a rate of 51.4%. The General Health Questionnaire illustrated significantly higher levels of stress and depression in mothers of children in the at-risk group (Snowling et al., 2007, p. 616).

Whitehouse, Spector, and Cherkas (2008) supported findings that students with dyslexia are at an increased risk for anxiety disorders (e.g., generalized anxiety disorder, panic disorder, stress disorders). The extent of this association by genetic and environmental influences is unclear. Whitehouse et al. (2008) agreed with previous findings that there is a moderate genetic link between dyslexia and anxiety, showing a slightly smaller degree of inheritability. The Whitehouse et al. (2008) research was unique because it explored the relationship between dyslexia and anxiety disorders with 940 monozygotic and 903 dizygotic female twin pairs. Their findings indicated "the relationship between dyslexia and anxiety is mediated by shared environmental factors" (Whitehouse et al., 2008, p. 282). Whitehouse et al. (2008) speculated the possibility of a reciprocal causal relationship between dyslexia and anxiety may lead to anxiously avoiding reading, thereby exacerbating the reading deficit. The researchers also suggested that there is not a causal relationship between dyslexia and anxiety, but other factors that run in families, such as a willingness to seek out health services and therefore receiving a diagnosis in both dyslexia and anxiety.

Bonifacci, Montuschi, Lami, and Snowling (2013) studied environmental factors in families determining differences in literacy outcomes. Two parent groups (40 with dyslexia and 40 without dyslexia) who did not differ in socioeconomic status were given a questionnaire on parental distress, family functioning, reading history, depression and anxiety. The parents who had dyslexia, as a group, exhibited parental distress and performed lower in all of the literacy areas measured. Although it was expected that parents' reading test scores were significantly related to their children's reading, the same group did not experience more emotional difficulties (Bonifacci et al., 2013, p. 13).

Summary

This literature review examined four components of dyslexia, after outlining evolving definitions of the disorder: (1) diagnosis, (2) attitudes, (3) treatment, and finally, (4) genetic link. This information will help the reader understand how significantly these four components impact students with dyslexia. From this review, it is clear that early diagnosis of dyslexia is beneficial, attitudes about dyslexia impact students' mental health, a multi-sensory approach to remediation has greatly improved literacy skills, and finally, dyslexia tends to run in families.

Chapter 3, The Methodology, will provide detailed description of the study, including: sample group selection, the research design, the development of the data gathering instruments, and how the research questions will be summarized.

Chapter 3: Methodology

Introduction

The purpose of the study was to identify the perceptions of parents in Central Minnesota who have dyslexic students in public, private and home school environments. The study also examined differences in parents' perceived satisfaction with their dyslexic child's schooling, based on: ages of the children at time of diagnosis, interventions used, student and teacher attitudes toward dyslexia, and co-existing conditions with the diagnosis of dyslexia. The study considered implications for educational leaders and policy makers based on the findings.

Chapters 1 and 2, respectively, provided overview of the proposed study and a review of current research related to the topic of parent perspectives of their dyslexic children and the factors that potentially impact school satisfaction. Chapter 3 describes research methods, sample, instrumentation, data collection, and method analysis.

Research Questions

In order to address the research problem, the following questions were developed:

1. How satisfied were Central Minnesota parents of dyslexic students with their schools?
2. How did the 2015 level of school satisfaction of parents of dyslexic students differ on the basis of the students' learning environment?
3. How did the level of school satisfaction differ among Central Minnesota parents' of dyslexic children based on the following factors:
    A. Age of child at time of diagnosis

B. Interventions used with dyslexic students

C. Child's attitudes toward dyslexia

D. Teachers' attitudes towards dyslexia

E. Co-existing conditions with dyslexia

F. Discontinuing attendance in one school setting and enrolling in another school setting

4. What implications, if any, did the parental perspectives of dyslexic students have on leaders and policy makers?

Survey Design

Based on the research questions, a mixed method research study was determined to be the most effective design for securing a more comprehensive understanding of parents' perspectives of dyslexic students. Quantitative research involves the collection of numerical data and information from participants to determine the relations between them (Slavin, 2007). Qualitative research methods focus on discovering and understanding the experiences, perspectives, and thoughts of participants (Hiatt, 1986).

The researcher designed the study questions based on the literature review. Although all of the research (read, studied and interpreted) influenced the study design, the researcher identified select articles for the formulation of instrument questions. Those select studies and their correlating parent survey questionnaire outlined as follows:

Survey question 1 and literature rationale. *Your child's gender (check the line that applies)* _____ *(1) Male* _____ *(2) Female*

The National Center for Learning Disabilities, in the article, The NICHD Research Program in Reading Development, Reading Disorders and Reading Instruction, G Reid Lyon stated that, "public schools identify approximately four times as many boys as girls" as dyslexic (1999). Sally Shaywitz (2003) also found that boys are identified more often than girls, but she added "we know some girls are dyslexic" (p. 31). In the dissertation, "Passing as Literate: Gender, Dyslexia and the Shaping of Identities," Burns (2010) explored the complexities of undiagnosed females with dyslexia.

Survey question 2 and literature rationale. *Who first suggested that your child may have dyslexia? (check their role or position)*

_____*(1)teacher*

_____*(2)principal*

_____*(3)other school staff*

_____*(4)doctor*

_____*(5)friend of the family*

_____*(6)grandparent*

_____*(7)acquaintance of the family*

_____*(8)close friend*

_____*(9)aunt, uncle or another extended family member*

_____*(10)other*

In the article, "An Unlikely Advocate, The Role of the School Nurse with Children Who Have Dyslexia", Debrew (2013) asserted that students with dyslexia often have physical and emotional complaints about school. Debrew (2013) stated that students with undiagnosed

dyslexia could often be discovered by a school professional, such as a school nurse, but they often lack the knowledge and training to identify possible struggles with dyslexia.

Survey question 3 and literature rationale. *What was the age of your child when he/she was first professionally identified with dyslexia?_____*

In the article, "The Identification and Assessment of Dyslexia", Lawrence and Carter (1999) stated that the recognition of dyslexia can lead to severe problems for the student as well as potential litigation for schools not addressing dyslexia earlier.

Survey question 4 and literature rationale. *Did you switch your child to a different school because of his/her dyslexia? _(1)Yes __(2)No*

If yes, what type of schools were involved? (e.g. private school to public school, home school to private school, online learning to charter school, public school to another public school, private school to another private school etc.), _____

In the article, "Considering the Role of Traditional and Specialist Schools: Do School Experiences Impact the Emotional Well-being and Self-esteem of Adults with Dyslexia" (2011), Nalavany et al. explored traditional and specialist schools' long-term impact on dyslexic students. McPhillips and Shevlin (2009) found academic and social benefits for dyslexic students to be enrolled in special settings.

Survey question 5 and literature rationale. *Which environment do you believe is the best environment for a child with dyslexia?*

_____ *(1)private school*

_____ *(2)public school*

_____ *(3)home school*

_____ *(4)charter school*

_____ *(5)on-line learning*

_____ *(6)other*

Do you believe this depends on the age of your child? ____ If yes,

how?_____

Ellis (1986) stated that students with dyslexia will achieve or fail to achieve a sense of self-worth in the schools they attend.

Survey question 6 and literature rationale. *Does your child have any conditions in addition to dyslexia? _____ If yes, please list_____*

Willburger and Landerl (2010), Germano et al. (2010), Nelson and Gregg (2014) and Whitehouse, Spector, and Cherkas (2008) studied conditions that were found to co-exist with dyslexia. Those studies examined adults and children and indicated there were some conditions closely associated with dyslexia.

Survey question 7 and literature rationale. *Is your child with dyslexia on an Individual Education Plan (IEP) or 504 Plan? _____ Yes _____ No*

If yes, which one?

_____*(1) IEP*

_____*(2) 504 Plan*

_____ *(3) Both*

In the article, "Dyslexia Laws in the USA", Youman and Mather (2013) found that laws supporting students with diagnosed dyslexia varied widely from state to state. In select instances, students with dyslexia were supported by Individual Education Plans (IEP) and 504

Plans; while in other instances they attended schools which provided no educational support for their dyslexia.

Survey question 8 and literature rationale. *There is a history of dyslexia in our family:*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the Dutch study, "Child and Parental Literacy Levels", involving families with a history of dyslexia, Van Bergen et al. (2012) found that children with a familial risk of dyslexia were severely impaired in phonology, spelling and word and pseudo word reading when compared to children without this familial risk of dyslexia.

Survey question 9 and literature rationale. *I wish I would have had my child evaluated for dyslexia at an earlier age.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the follow-up study by Snowling et al. (2007), low literacy levels were found longstanding in students the ages of 8 and 13 years old. These emotional and behavioral difficulties may be diminished with early remediation as determined in a study by Schiffman (1964). Schiffman (1964) who found reading disabilities of students that were discovered by the second grade had an over 10 times greater chance of being remediated, versus student difficulties discovered in the ninth grade.

Survey question 10 and literature rationale. *My child had warning signs of dyslexia in preschool.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the study, "Comorbidities in Preschool Children at Family Risk of Dyslexia" (2014), Gooch et al. found children's early language and motor skills were predictors of later reading skills.

Survey question 11 and literature rationale. *My child became less engaged with school as he/she grew older.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the book, *Essentials of Dyslexia Assessment and Intervention*, Mather and Wendling (2012) asserted that students with dyslexia become less engaged with school as the student continues through school.

Survey question 12 and literature rationale. *My child expressed there was something wrong with him/her.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

McNulty (2003) in his qualitative research, found consistencies of feeling: "somethings wrong with me" often going back to early childhood.

Survey question 13 and literature rationale. *My child's self-esteem improved after being identified as dyslexic.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the book *Overcoming Dyslexia*, Sally Shaywitz (2003) suggested that diagnosing young adults with dyslexia can have a positive effect of their self-esteem. The value of a dyslexia evaluation was explored in the paper, "Psychological assessment and dyslexia: parents' perspectives", Long and McPolin (2009). Many of the respondents in this study appreciated and valued the positive effect the evaluation had on their child with dyslexia.

Survey question 14 and literature rationale. *My child has superior talents in certain areas.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the book, *The Dyslexic Advantage: Unlocking the Hidden Potential of the Dyslexic Brain* (2011), Eide and Eide asserted four areas of "M.I.N.D" strengths. After literally hundreds of interviews with dyslexic people, strengths in material reasoning, interconnected reasoning, narrative reasoning and dynamic reasoning had been identified.

Survey question 15 and literature rationale. *My child receives multi-sensory teaching methods outside of school. (e.g., a private tutor)*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

From the website: What Works Clearinghouse, sponsored by the Department of Education (2010), Orton-Gillingham ascertained that strategies and other multi-sensory teaching methods were highly effective with dyslexic students.

Survey question 16 and literature rationale. *My child's school has the resources to provide intensive treatment for dyslexia, which includes multi-sensory instruction and accommodations.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the book, *The Dyslexic Scholar–Helping Your Child Succeed in the School System* (1995), Nosek suggested that parents seek out multi-sensory instruction in school for their dyslexic child.

Survey question 17 and literature rationale. *My child's teacher(s) has the knowledge and skills to provide accommodations to ensure academic success.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the research by Washburn et al. (2011), preparation of pre-service teachers to teach dyslexic students was examined. Elementary pre-service teachers were found to have misconceptions about dyslexia being a visual perception deficit rather than a problem with phonological processing.

Survey question 18 and literature rationale. *My child's teacher(s) sees my child as intelligent.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

Comments_____

In the article, "Are They Just Lazy? Student Teachers' Attitudes about Dyslexia" (2009), Gwernan-Jones and Burden found small, but significant changes, in the attitude scores of college students who took a survey before and after their practice teaching. The study proposed that teachers may be entering the field with more positive beliefs in their abilities to help dyslexic students.

Survey question 19 and literature rationale. *My child's teacher fosters motivation and hope in my child with dyslexia.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

*Comments*_____

_____

In the article, "Fostering Motivation, Hope and Resilience in Children with Learning Disorders" (2001), Brooks asserted that the mindset of teachers and parents is important to the success of dyslexic students.

Survey question 20 and literature rationale. *My child's teacher(s) is able to support his/her learning.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

The website of the National Center For Learning Disabilities reported in the article, "The NICHD Research Program in Reading Development, Reading Disorders and Reading Instruction" (Lyon & NCLD, 1999), that over 40% of fourth grade students perform below the basic reading level standard. Lyon and NCLD asserted that many teachers did not have the basic knowledge of reading development in their college classes.

Survey question 21 and literature rationale. *My Child had a difficult time learning a foreign language.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

Based on the research by Rontou (2012), the above parent survey question was developed. In the article, "Contradictions around Differentiation for Pupils with Dyslexia Learning a Foreign Language" (2012), Rontou focused on the learning of a foreign language with Greek pupils. He found that learning a foreign language is often difficult for dyslexic students.

Survey question 22 and literature rationale. *My child receives multi-sensory teaching methods at school.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the dissertation, “Initial Effects of Wilson Reading System on Student Reading and Spelling Achievement” (2013), Ashby employed a short-term study on 43 struggling readers, using Wilson reading methods, and found significant improvements by dyslexic students on the Word Attack and Spelling of Sounds subtests, as measured by the Woodcock Johnson III Tests of Achievement.

Survey question 23 and literature rationale. *The label of dyslexia helped my child’s teachers understand and support my child.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the book, *Essentials of Dyslexia Assessment and Intervention* (2012), Mather and Wendling suggested that having a label of dyslexia may assist parents in getting additional help and understanding for their child.

Survey question 24 and literature rationale. *My child’s teacher(s) has enough information about dyslexia.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the article, “Coping with Dyslexia in the Regular Classroom: Inclusion or Exclusion” (Richardson, 1996), the author suggested that there was evidence that teachers are not required to have knowledge about teaching reading and/or how to help dyslexic students. Richardson stated that without future changes to teacher preparation, it is doubtful there will be little benefit for students in the regular education classrooms.

Survey question 25 and literature rationale. *I believe my child with dyslexia will attend college or vocational school and graduate.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

In the article, "Dyslexia and the Economy" (2011), Marazzi stated that the interpretation of how dyslexia effects a person's professional career has changed dramatically over the past 5 decades. What was once called the "disease of the century" is now considered a talent and can be enhanced through effective tutoring instruction and future higher education pursuit.

Survey question 26 and literature rationale. *I believe my child will make a career given his/her strengths.*

(1)Strongly Agree	*(2)Agree*	*(3)Neutral*	*(4)Disagree*	*(5)Strongly Disagree*	*(6)Unable to Rate*

Based on the article, "The Coexistence of Artistic Talent and Dyslexia" (Daniels 1996), this parent survey question was developed. In the case study research of Daniels (1996), the researcher studied the coexistence of dyslexia and artistic talent. The two artists in the study had experienced success as acclaimed artists, and both had to develop coping strategies to complete their schooling. One artist graduated from Yale University, while the other received a scholarship at Cooper Union for recognition of fine art drawings hailed to have social and psychological significance.

Survey Data Collection

Data were collected through a postal mail survey. A postal questionnaire was chosen as the preferred vehicle for data collection because it was a financially viable method to gather information, and the respondents were not influenced by the interviewer (Slavin, 2007). Postal mail addresses were obtained from the Family Member forms of each of the selected files of the researcher and two other licensed Dyslexia Testing Specialists who administered dyslexia evaluations in the Central Minnesota area. Demographic information was limited to those parents who resided in Central Minnesota at the time of dyslexia diagnosis.

Study Participants

The researcher and two other Dyslexia Testing Specialists evaluated 90 private school, 15 home school, and 74 public school students for dyslexia in central Minnesota from September 2007 through December, 2013. Study surveys were distributed to the parents of those students–a total of 179 surveys, one survey per household.

Instrumentation for Data Collection and Analysis

For the study, each of the parent surveys were produced on a different colored paper to reflect the school environment by which they were identified at the time of their child's dyslexia diagnosis. Surveys were copied on green paper for the parents of home school students, goldenrod surveys were mailed to the parents of public school students and white surveys were produced for the parents of students attending private schools. The participants in the study were anonymous.

Pilot Testing

The researcher pilot tested the survey tool with her colleagues in the St. Cloud State Educational and Leadership doctoral program and also, with a dyslexia parent and professional networking group. Based on feedback received from the two field tests, the survey questions were adjusted to enhance clarity.

Human Subject Approval-Institutional Review Board (IBR)

The researcher submitted a request for approval of the study and instruments to the Institutional/Review Board (IRB) of St. Cloud State University. The request was approved.

The study's respondents were informed that they were at liberty to withdraw from involvement in the study at any time, the results of the study survey were confidential, and the participants were not to be asked to provide identifiable information.

Procedures and Timeline

Parents of dyslexic students were sent surveys by postal mail in September of 2015. Participants were asked to return mail the completed survey in the postage paid, pre-addressed envelope provided within a two-week time frame. A follow-up mailing would have been sent to secure timely and numerically adequate responses to the parent survey, but it was determined to be unnecessary due to the high return rate of the initial mailing.

Data Analysis

The study's sample group members were identified from file information by the researcher and two other certified Dyslexia Testing Specialists who had diagnosed dyslexia in 179 students residing in central Minnesota from September 2007 to December 2013. According to Slavin (2007), descriptive statistics are "simply convenient ways of

summarizing characteristics of data in a form everyone can understand and use" (p. 21). The data were analyzed to respond to each of the research questions. Analysis of data was conducted at the St. Cloud State Office of Statistical Analysis using the Statistical Package for Social Sciences (SPSS). An eternal reliability coefficient was calculated. Using the SPSS, Chronbach's Alpha was computed to be .769 for the total scale. With an alpha score above .7, it was verified that the sample had good internal consistency and reliability.

For the purpose of the study, basic statistical data such as frequency and Pearson Chi-square were employed. One-way ANOVAs were used to compare parents of students enrolled in public schools and parents of students enrolled in private school responses.

Summary

Chapter 3 discussed the methodology used in the study, including the purpose of the study, research questions, participants, instrumentation and analysis, research design, survey design, and procedures and timeline. Chapter 4 summarizes the findings of the study. Chapter 5 presents the conclusions, implications, and recommendations for further studies related to parental perspectives on their dyslexic students.

Chapter 4: Data Analysis

Introduction

Dyslexia and its relationship to student performance in school settings is a complicated topic that researchers have been studying for over 100 years (Hudson et al. 2007). According to the Minnesota Department of Education website for the 2013-2014 school year, there were 837,154 students enrolled in public schools, 69,291 students in private schools and 17,451 home schooled students. There is limited research on the perspectives of parents of dyslexic students in evaluating their satisfaction with different school environments.

School administrators and educational leaders are required to educate all students, no matter what their learning styles. Since dyslexia affects 15-20% of the school population (Washburn et al., 2011), it would be reasonable to assume that dyslexic students are being underdiagnosed and, therefore, underserved. Parents are the ultimate consumers of public education. As the care providers and decision makers for their children's education, it would be of interest to educational leaders to understand parent satisfaction levels regarding their dyslexic school-age children.

The purpose of the study was to examine satisfaction levels of select central Minnesota parents of dyslexic children, regarding the public, private and home school learning environments of their children.

In order to address the research problem, the following questions were developed:

1. How satisfied were central Minnesota parents of dyslexic students with their schools?

2. How did the 2015 level of school satisfaction of parents of dyslexic students differ on the basis of the students' learning environment?
3. How did the level of school satisfaction differ among central Minnesota parents' of dyslexic children based of the following factors:
    A. Age of child at time of diagnosis
    B. Interventions used with dyslexic students
    C. Child's attitudes toward dyslexia
    D. Teachers' attitudes towards dyslexia
    E. Co-existing conditions with dyslexia
    F. Discontinuing attendance in one school setting and enrolling in another school setting
4. What implications, if any, did the parental perspectives of dyslexic students have on leaders and policy makers?

Research Methods

Based on the research questions, a mixed method research study was determined to be the most effective design to secure a comprehensive understanding of the perspective of parents of dyslexic students. The researcher designed the questions based on the literature reviewed. Although all of the research (read, studied and interpreted) influenced the study design, the researcher identified key articles to develop survey questions to address the research questions.

The researcher pilot tested the survey tool with her colleagues in the St. Cloud State University Educational and Leadership doctoral program and also, with a dyslexia parent and

professional networking group. Based on feedback received from the two field tests, the survey questions were adjusted to enhance clarity.

The researcher submitted a request for approval of the study and instruments to the Institutional/Review Board (IRB) of St. Cloud State University. The request was approved.

The study's respondents were informed that (1) they were at liberty to withdraw from involvement in the study at any time, (2) the results of the study survey were confidential, and (3) they were expected to provide identifiable information.

Parents of dyslexic students were sent surveys (Appendix A) by postal mail in September of 2015. Participants were asked to return mail the completed survey in the postage-paid, pre-addressed envelope provided, within a two-week time frame.

Initially, a response rate goal of 65% was established by the researcher. In order to ensure achievement of that participation level, a follow-up mailing was planned. The survey mailing was distributed in early September of 2015. The response rate goal of 65% was exceeded; consequently, no follow-up mailing was necessary. The total number of respondent responses received was 138, or 77.1%.

Analysis of data was conducted at the St. Cloud State Office of Statistical Analysis using the Statistical Package for Social Sciences (SPSS). Ultimately, data from 135 surveys were used, as three surveys were deemed invalid due to non-responses.

Survey Results

Parents of dyslexic students were surveyed. Data were reported in percentages of respondents, rather than percentages of responses, due to the fact that the survey was designed to allow respondents to skip individual responses if they chose to do so. Non-

responses were treated as missing data. The results of the study are reported in this section according to the question sequence of the survey (e.g., Table 1 = survey question one).

Table 1 reflects the gender of parent respondents' children. As reported in Table 1, respondents indicated a comparatively even distribution of student gender, with 57.7% reported as male and 42.3% as female.

Table 1

Gender Identification of Respondents' Dyslexic Children

	Frequency	Percent	Valid Percent
Male	75	55.6	57.7
Female	55	40.7	42.3
Total	130	96.3	100.0
Missing Data	5	3.7	

The website for the National Center for Learning Disabilities posted the article entitled, NICHD Research Program in Reading Development, Reading Disorders and Reading Instruction. In it, Lyon and NCLD (1999) stated that, "public schools identify approximately four times as many boys as girls" with dyslexia. Sally Shaywitz (2003) also found that boys are identified more often than girls, but she added "we know some girls are dyslexic" (p. 31).

Survey item two asked parent respondents to identify who first suggested that their child was dyslexic. The summary of those responses are in Table 2.

Table 2

Frequency of Groups That Identified Dyslexia in Respondents' Children

Groups/Roles Who Identified Dyslexia	Frequency	Valid Percent
Teacher	28	21.4
Other school staff	4	3.1
Friend of the family	11	8.4
Grandparent	1	.8
Acquaintance of the family	6	4.6
Close friend	11	8.4
Extended family	7	5.3
Other	63	48.1
Missing	4	

Table 2 data reveals that 28 of 131 respondents or 21.4%, reported that a teacher suggested to parents their children may be dyslexic (n = 11, or 8.4%). A friend of the family, or a close friend (n = 11 or 84%) relayed to parents that their child/ren may be dyslexic. An analysis of data from 63 respondents who cited "other" as the identifying party, revealed that 37 respondents or 28.2% were responding parents who identified their own children as possibly dyslexic.

Survey item three asked about the age of the child when he/she was identified with dyslexia. For a summary of responses to this survey item, see Table 3.

Table 3

Age of Respondent's Child When Diagnosed with Dyslexia

Dyslexic Child's Age	Frequency	Valid Percent
6	10	8.8
7	15	13.3
8	23	20.4
9	16	14.2
10	8	7.1
11	11	9.7
12	7	6.2
13	6	5.3
14	4	3.5
15	2	1.8
16	4	3.5
17	5	4.4
18	1	.9
21	1	.9
Total	113	100.0
Missing	22	
Total	135	

Table 3 reports the children's ages at the time of their dyslexia diagnosis ranged from 6 years to 21 years, though 64 respondents or 56.6% identified that their children were 9 or younger. The most common age of dyslexia diagnosis was 8 years (n = 23 or 20.4%). Only two or 1.7% of the dyslexic students were diagnosed when they were an adult (18 years or older).

Survey item four asked if the parent transferred their child to a different school because of their diagnosis; Table 4 summarizes the frequency of parent responses.

Table 4

Respondents' School Choice for Their Children Post Diagnosis

Did you switch your child to a different school because of his/her dyslexia?	Frequency	Valid Percent
Yes	16	11.9
No	118	88.1
Total	134	100.0
Missing	1	
Total	135	

As reflected in Table 4, 118 students (87.4%) were not transferred to another school because of their dyslexia. Those respondents who reported transferring from one school to another numbered 16 or 11.9%.

Survey item five probed respondents on their perception of the ideal school environment for their dyslexic children. For a summary of responses to this survey item, see Table 5.

Table 5

Respondents' Perceived Ideal School Environment for Their Dyslexic Child

Which environment do you believe is the best environment for a child with dyslexia?	Frequency	Valid Percent
Private School	52	47.3
Public School	15	60.9
Home School	21	80.0
Charter	1	80.9
Other	21	100.0
Total	110	
Missing	25	
Total	135	

Analysis reveals mixed responses regarding whether or not parents believe the environment their dyslexic child is placed in, is actually ideal for them. Ten of the 12 home school parents (83.33%) believed the home school environment was ideal for their dyslexic child/ren. Eighteen of 60 parents (30.0%) of dyslexic children who attend public schools believed that the public school environment was their ideal choice. Thirty-seven of the 66 parents (56.06%) with dyslexic children in private school environments them to be ideal.

Table 6 reflects respondent responses to the request to identify any co-existing condition along with their child's dyslexia diagnosis.

Table 6

Co-existing Conditions to Dyslexia Identified by Parent Respondents

Does your child have any other conditions in addition to dyslexia?	Frequency	Valid Percent
Yes	61	54.6
No	51	45.5
Total	112	100.0
Missing	23	
Total	135	

Table 6 reflects 61 or 54.6% of respondents identified other conditions that co-existed with their dyslexic child/ren. Of those 61 parent respondents, 28 students (45.9%) had Attention Deficit Disorder (ADD), 23 students (37.7%) had Dysgraphia, 11 students (18.03%) had Anxiety Disorder, 3 students (4.91%) also had Dyspraxia, 2 students (3.27%) had light sensitivity, 2 students (3.27%) had a speech disability, 1 student (1.64%) had depression, and 1 student (1.64%) had Sensory Integration Dysfunction. Some respondents identified multiple co-existing conditions, and therefore the total percentage exceeds 100%.

Respondents were asked to identify if their dyslexic child had an Individual Education Plan (IEP) and, or a 504 accommodation plan. A summary of those responses is presented in Table 7.

Table 7

The Number of Respondents' Dyslexic Children Receiving IEP or 504 Plans

Is your child with dyslexia on an Individual Education Plan (IEP) or 504 Plan?	Frequency	Valid Percent	Cumulative Percent
Yes	107	80.5	80.5
No	26	19.5	100.0
Total	133	100.0	
Missing	2		
Total	135		

Table 7 reports that 104 respondents, 17 (16.35%) students were on an IEP, 85 (81.73%) were on a 504 Plan, and 2 reported (1.92%) being on both an IEP and a 504 Plan.

Select quantitative data were collected on the study survey by requesting that respondents cite their agreement with multiple statements. Respondents expressed their level of agreement to each statement by choosing one of the following responses: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree, and Unable to Rate. Parent responses to these survey statements are compiled in Tables 8-26. Note: Respondents checking Unable to Rate were included in Missing Data and not reported below.

Table 8

Statement #1-There is a History of Dyslexia in Our Family

N = 128	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	74	57.8	57.8
Agree	43	33.6	91.4
Neutral	5	3.9	95.3
Disagree	4	3.1	98.4
Strongly Disagree	2	1.6	100
Total	128	100.0	

Table 8 data reveals that 117 of the 128 responses or 91.4% of the respondents either agreed or strongly agreed there was a history of dyslexia in the family.

Survey statement two sought to determine whether or not parents wished they had their child evaluated at an earlier age; Table 9 reports parental responses.

Table 9

Statement #2-I Wish I Would Have had My Child Evaluated for Dyslexia at an Earlier Age

N = 132	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	83	60.1	62.9	62.9
Agree	19	13.8	14.4	77.3
Neutral	19	13.8	14.4	91.7
Disagree	8	5.8	6.1	91.7
Strongly Disagree	3	2.2	2.3	
Total	132	95.7	100.0	

Table 9 reports that 102 or 77.3% of respondents agreed or strongly agreed they wished they had their child/ren evaluated for dyslexia at an earlier age. According to Table 3, the age range children were identified with dyslexia ranged from 6 to 21 years old, and 56.6% of the respondents had their child identified with dyslexia from the ages of 6 to 9 years of age.

Table 10 reports responses to survey statement three in which respondents were asked to cite whether or not they observed warning signs of dyslexia in their child during preschool.

Table 10

Statement #3-My Child had Warning Signs of Dyslexia in Preschool

N = 133	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	54	40.6	40.6
Agree	38	28.6	69.2
Neutral	22	16.5	85.7
Disagree	16	12.0	97.7
Strongly Disagree	3	2.3	100.0
Total	133	100.0	

Table data reveal that 92 or 69.2% of the respondents agreed their child/ren had warning signs of dyslexia in preschool. A total of 19 of 133 or 14.3%) of respondents reported they disagreed or strongly disagreed their child/ren had warning signs of dyslexia in preschool.

Table 11 presents the parent respondent perceptions of school engagement as their child aged. Data reveal that 73 of 135 or 54.1% strongly agreed or agreed their dyslexic students became less engaged with school as they grew older. Those parents whose dyslexic children were not reported to be less engaged in school as they advanced totaled 43 of 135 or 31.9%.

Table 11

Statement #4-My Child became Less Engaged with School as He/She Grew Older

N = 135	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	44	32.6	32.6
Agree	29	21.5	54.1
Neutral	19	14.1	68.1
Disagree	34	25.2	93.3
Strongly Disagree	9	6.7	100.0
Total	135	100.0	

Table 12 presents respondents' levels of agreement with survey statement five, which asked if their children expressed feeling something was wrong with them. The highest measure was agree (31.3), while disagree (29.9 %) had a similar measure.

Table 12

Statement #5-My Child Expressed There was Something Wrong with Him/Her

N=134	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	23	17.2	17.2
Agree	42	31.3	48.5
Neutral	17	12.7	61.2
Disagree	40	29.9	91.0
Strongly Disagree	12	9.0	100.0
Total	134	100.0	

Table 13 presents respondents' perceptions of their child/ren's self-esteem after the child received a diagnosis of dyslexia.

Table 13

Statement #6-My Child's Self-Esteem Improved after Being Identified as Dyslexic

N = 135	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	43	31.9	31.9
Agree	44	32.6	64.4
Neutral	37	27.4	91.9
Disagree	10	7.4	99.3
Strongly Disagree	1	.7	100.0
Total	135	100.0	

Table data establishes 87 or 64.4% of the respondents, agreed or strongly agreed that their child's self-esteem improved after being identified with dyslexia. Only 11 of the 135

respondents or 12.3% disagreed or strongly disagreed that their child's self-esteem did not improve.

Table 14 presents respondents' perceptions of their child possessing superior talents. When the strongly agree and agree indicators were combined, 118 of 137 or 86.1% of respondents perceived their child had superior talents in certain areas. Respondents who disagreed or strongly disagreed with the statement, totaled 3%.

Table 14

Statement #7-My Child has Superior Talents in Certain Areas

N = 137	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	77	56.2	56.2
Agree	41	29.9	86.1
Neutral	15	10.9	97.1
Disagree	2	1.5	98.5
Strongly Disagree	2	1.5	100.0
Total	137		

Table 15 reports whether or not a parent respondent's child received multi-sensory teaching methods outside of school, and after conclusion of the typical school day.

Table 15

Statement #8-My Child Receives Multi-sensory Teaching Methods Outside of School

N = 124	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	70	56.5	56.5
Agree	29	23.4	79.8
Neutral	3	2.4	82.3
Disagree	17	13.7	96.0
Strongly Disagree	5	4.0	100.0
Total	124	100.0	

Table data confirms that 99 of 124 or 79.8% of all respondents strongly agreed or agreed that their child received multi-sensory instruction outside of school and after the conclusion of the school day. Those who disagreed or strongly disagreed with the statement totaled 22 or 17.7% of all respondents.

Table 16 presents the parents' views of their child's school having adequate resources for intensive treatment of dyslexia. The treatment would include multi-sensory instruction and accommodations.

Table 16

Statement #9-My Child's School has Resources to Provide Intensive Treatment for Dyslexia, Which Includes Multi-Sensory Instruction and Accommodations

N = 133	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	16	12.0	12.0
Agree	17	12.8	24.8
Neutral	15	11.3	36.1
Disagree	32	24.1	60.2
Strongly Disagree	53	39.8	100.0
Total	133	100.00	

Table data establishes that 75 of 133 or 63.9% of all respondents disagreed or strongly disagreed that their child's school had resources for intense multi-sensory instruction and accommodations.

Table 17 reports parents' views on the child's teacher having the knowledge and skills to provide accommodations for academic success.

Table 17

Statement #10-My Child's Teacher(s) has the Knowledge and Skills to Provide Accommodations to Ensure Academic Success

N = 134	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	12	9.0	9.0
Agree	38	28.4	37.3
Neutral	22	16.4	53.7
Disagree	35	26.1	79.9
Strongly Disagree	27	20.1	100.0
Total	134	100.0	

In Table 17, 62 of 134 or 46.2% of all respondents either disagreed or strongly disagreed that their child's teacher had the skill and knowledge to provide accommodations to ensure academic success. In contrast, 50 of 134 respondents or 37.3% agreed or strongly agreed.

Table 18 reports on whether or not the respondents perceived their child's teacher viewed their child as being intelligent. Table data confirmed that 90 of 132 or 68.2% of all respondents felt that their child's teacher viewed their child as intelligent. Twelve respondents or 9.1% disagreed or strongly disagreed with the statement.

Table 18

Statement #11-My Child's Teacher sees My Child as Intelligent

N=132	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	35	26.5	26.5
Agree	55	41.7	68.2
Neutral	30	22.7	90.9
Disagree	11	8.3	99.2
Strongly Disagree	1	.8	100.0
Total	132	100.0	

Table 19 shows respondents' level of agreement regarding whether or not their child's teacher fostered motivation and hope in their child. Table data established that 73 of 131 or 66.4% of all respondents reported they agreed or strongly agreed.

Table 19

Statement #12- My Child's Teacher Foster Motivation and Hope in My Child with Dyslexia

N = 131	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	14	10.7	10.7
Agree	59	45.0	55.7
Neutral	30	22.9	78.6
Disagree	19	14.5	93.1
Strongly Disagree	9	6.9	100.0
Total	131	100.0	

Table 20 shows respondents' level of agreement regarding whether the child's teacher has the ability to support their child's learning. The largest number of respondents, 65 of 132 or 56.8% reported that they agreed or strongly agreed that their child's teacher was able to support their learning. Slightly greater than one in five respondents (28 or 21.4%) disagreed or strongly disagreed with the statement.

Table 20

Statement #13-My Child's Teacher(s) is able to Support His/Her Learning

N = 132	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	11	8.3	8.3
Agree	64	48.5	56.8
Neutral	39	29.5	86.4
Disagree	12	9.1	95.5
Strongly Disagree	6	4.5	100.0
Total	132		

Table 21 reflects whether or not respondents' dyslexic children struggled in foreign language learning. The table reveals that 74 of 96 or 77.1% of the respondents agreed or strongly agreed that their child had a difficult time learning a foreign language.

Table 21

Statement #14-My Child had a Difficult Time Learning a Foreign Language

N = 96	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	52	54.2	54.2
Agree	22	22.9	77.1
Neutral	11	11.5	88.5
Disagree	8	5.2	93.8
Strongly Disagree	6	6.3	100.0
Total	96	100.0	

Table 22 reflects whether or not respondents' dyslexic children received multi-sensory methods in their school settings. The respondents who strongly agreed or agreed that their child received multi-sensory instruction at school numbered 29 of 131 or 29.8%, while 65 of 131 or 49.6% of all respondents disagreed or strongly disagreed that their children received a multi-sensory teaching approach.

Table 22

Statement #15-My Child Receives Multi-sensory Teaching Methods at School

N = 131	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	12	9.2	9.2
Agree	27	20.6	29.8
Neutral	27	20.6	50.4
Disagree	37	28.2	78.6
Strongly Disagree	28	21.4	100.0
Total	131	100.0	

Table 23 shows respondents' levels of agreement regarding whether or not the label of dyslexia helped their child's teacher understand and support their child. The data reveal that 86 of 135 or 63.7% of the respondents agreed or strongly agreed with the statement. Twenty-three respondents or 17.3% disagreed or strongly disagreed with the statement.

Table 23

Statement #16-The Label of Dyslexia Helped My Child's Teacher(s) Understand and Support My Child

N = 135	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	30	22.2	22.2
Agree	56	41.5	63.7
Neutral	26	19.3	83.0
Disagree	14	10.4	93.3
Strongly Disagree	9	6.7	100.0
Total	135	100.0	

Table 24 shows respondents' levels of agreement regarding whether or not their child's teacher was well-informed about dyslexia. Table data reveal that 85 of 127 or 67.0% of respondents disagreed or strongly disagreed that their children's teachers had enough information about dyslexia, while 26.8% of respondents expressed belief that the teacher did have sufficient information about dyslexia.

Table 24

Statement #17-My Child's Teacher(s) has Enough Information about Dyslexia

N = 127	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	9	7.1	7.1
Agree	16	12.6	19.7
Neutral	17	13.4	33.1
Disagree	34	26.8	59.8
Strongly Disagree	51	40.2	100.0
Total	127	100.0	

Table 25 shows respondents' levels of agreement with the belief that their child would succeed in post-secondary education.

Table 25

Statement #18-I Believe My Child with Dyslexia will Attend College or Vocational School and Graduate

N = 134	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	80	59.7	59.7
Agree	44	32.8	92.5
Neutral	8	6.0	98.5
Disagree	1	.7	99.3
Strongly Disagree	1	.7	100.0
Total	134	100.0	

Data confirm that 124 of 134 or 92.5% of the respondents either agreed or strongly agreed that their children would attend and graduate from college or vocational school. Only two respondents disagreed or strongly disagreed with the statement.

Table 26 reports whether or not parent respondents expressed a belief that their child would make a career out of their strengths.

Table 26

Statement #19-I Believe My Child will Make a Career Given His/Her Strengths

N=137	Frequency	Valid Percent	Cumulative Percent
Strongly Agree	94	68.6	68.6
Agree	40	29.2	97.8
Neutral	1	.7	98.5
Disagree	1	.7	99.3
Strongly Disagree	1	.7	100.0
Total	137	100.0	

A total of 134 of 137 or 97.8% of the respondents agreed or strongly agreed that their child would make a career, given their strengths. Only two respondents either strongly disagreed or disagreed with the statement.

Comparative Data by Research Question

Research question one. *How satisfied were central Minnesota parents of dyslexic students with their schools?*

When considering parent satisfaction with their dyslexic child's school, several factors were examined in order for satisfaction to be present. The research question examined: (a) resources for students with dyslexia, (b) knowledge and attitudes of teachers, and (c) accommodations for dyslexic learners. Eight of the survey questions were tailored to answer the research question. The eight statements are as follows (numbered as they appeared in the survey):

9. My child's school has the resources to provide intensive treatment for dyslexia, which includes multi-sensory instruction and accommodations.

10. My child's teacher(s) has the knowledge and skills to provide accommodations to ensure academic success.
11. My child's teacher(s) sees my child as intelligent.
12. My child's teacher fosters motivation and hope in my child with dyslexia.
13. My child's teacher(s) is able to support his/her learning.
15. My child receives multi-sensory teaching methods at school.
16. The label of dyslexia helped my child's teachers understand and support my child.
17. My child's teacher(s) has enough information about dyslexia.

Basic statistical calculations such as mean, standard deviation, and degrees of freedom were employed in the analysis of data. The researcher used frequency distribution, independent samples, t-tests and one-way ANOVA to compare parents of dyslexic learner's responses. All data were downloaded into the Statistical Package for Social Sciences (SPSS) for analysis. Satisfaction on the eight statements were assigned a number based on a 5-point scale (1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree). The number of respondents' totaled 135, or N = 135.

Table 27 ranks, by mean scores, parent satisfaction of their dyslexic child's school based on eight survey statements.

Table 27

Mean Scores of Satisfaction of Central Minnesota Parents of Dyslexic Students with Their Schools (N = 135)

Statement	M (N = 135)	SD
#11, My child's teacher(s) sees my child as intelligent	2.13	.904
#16, The label of dyslexia helped my child's teachers understand and support my child	2.35	1.115
#13, My child's teacher(s) is able to support his/her learning	2.53	.905
#12, My child's teacher fosters motivation and hope in my child with dyslexia	2.6	1.024
#10, My child's teacher(s) has the knowledge and skills to provide accommodations to ensure academic success	3.19	1.267
#15, My child receives multi-sensory teaching methods at school	3.29	1.245
#9, My child's school has the resources to provide intensive treatment for dyslexia, which includes multi-sensory instruction and accommodations	3.69	1.385
#17, My child's teacher(s) has enough information about dyslexia	3.84	1.223

Respondents' answers to the eight statements related to research question one, which displayed a range from positive satisfaction to neutral on factors identified for parent satisfaction. Specifically, survey statement eleven: My child's teacher(s) sees my child as intelligent, yielded the lowest mean score (2.13), which indicated that a majority of parents agreed with that statement. Survey statement seventeen: My child's teacher(s) has enough information about dyslexia, yielded the highest mean score, 3.84, a value that expressed a disagreement level of respondent satisfaction.

Research question two. *How did the current (2015) level of school satisfaction of parents of dyslexic students differ on the basis of the students' learning environment?*

Research question two focused on comparing parents' satisfaction levels with the dyslexic students' three represented learning environments: home school, private school and public school. Data pertaining to this research question were gathered from the Parent Perspectives of the Effects of Public, Private and Home School Learning Environments on Students with Dyslexia survey. The eight survey questions identified for parent satisfaction were used for both research question one and research question two (questions numbered consistent with the survey):

9. My child's school has the resources to provide intensive treatment for dyslexia, which includes multi-sensory instruction and accommodations.
10. My child's teacher(s) has the knowledge and skills to provide accommodations to ensure academic success.
11. My child's teacher(s) sees my child as intelligent.
12. My child's teacher fosters motivation and hope in my child with dyslexia.
13. My child's teacher(s) is able to support his/her learning.
15. My child receives multi-sensory teaching methods at school.
16. The label of dyslexia helped my child's teachers understand and support my child.
17. My child's teacher(s) has enough information about dyslexia.

Basic statistical information such as mean, standard deviation, and degrees of freedom were employed in analyzing the data. The researcher used analysis of variance and one-way ANOVA to compare public school parents', private school parents' and home school parents'

responses. All data were uploaded into the Statistical Package for Social Sciences (SPSS) for analysis.

Table 28 reports that satisfaction between the home school and private school parents was similar. The satisfaction of parents in public school learning environment was significantly different from the home school and private school groups.

Table 28

Mean Scores of Satisfaction of Central Minnesota Parents of Dyslexic Students with Their Schools (N = 135)

Learning Environment	N	Group	Group
Home School	12	19.6667	
Private School	65	23.5538	
Public School	58		28.8621

Note. Significance = 0.05

Analysis of variance revealed there was a significant difference in perception between the learning environment groups. The public school group was significantly less satisfied than the home school and private school groups.

Research question three. *How did central Minnesota parents of dyslexic students perspectives differ on the basis of the following factors?*

Research question three focused on comparing the three educational learning environments (home school, private and public) of respondents, based on six factors:

A. Age of child at time of diagnosis

B. Intervention used with dyslexic students

C. Child's attitudes toward dyslexia

D. Teacher's attitudes towards dyslexia

E. Co-existing conditions with dyslexia

F. Discontinued attendance in one school setting and enrolling in another setting

Basic statistical information such as mean, standard deviation, and degrees of freedom were employed in analyzing the data. The researcher used analysis of variance and one-way ANOVA to compare responses from public school, private school and home school parents of dyslexic students. All data were uploaded into the Statistical Package for Social Sciences (SPSS) for analysis.

Table 29 reports the mean age of students at time of diagnosis. There was no significant difference in the age of the child at time of diagnosis. The highest mean age of identification of dyslexic students, 11.27%, was in the home school environment. Next was the public school environment with a mean age of 10.3. Finally, the earliest mean age of identification of dyslexic students was private school with 9.49.

Table 29

The Mean Age of Students at Time of Diagnosis by Learning Environment

Learning environment	N	Mean	Standard Deviation	Standard Error
Public School	47	10.3	3.362	.490
Home School	11	11.27	3.823	1.153
Private School	55	9.49	2.987	.403
Total	113	10.00	3.251	.306

There were two survey statements that addressed interventions used with dyslexic students: statement #8 and #15. There was no significant difference found in responses (.187) for statement #8: My child receives multi-sensory teaching methods outside of school. Although there was no statistically significant difference between the groups when comparing multi-sensory instruction outside of school, there was a significant difference when comparing the group's perception of multi-sensory methods within their child's current

setting. Statement #15: My child receives multi-sensory teaching methods at school, reveals a significant difference (.000) as noted on Table 30. Parents of students overall were neutral or disagreed with the statement.

Table 30

The Mean Level of Agreement Parents had with the Multi-sensory Methods within Their Child's Learning Environment

Learning environment	N	Mean	Standard Deviation	Standard Error
Public School	58	3.86	1.115	.146
Home School	12	2.17	1.403	.405
Private School	65	2.98	1.082	.134
Total	135	3.29	1.245	.107

Survey statements #5 and #6 reported parent respondents' perceptions of their child's attitudes toward dyslexia. Survey statement#5: My child expressed there was something wrong with him/her. Survey statement #6: My child's self-esteem improved after being identified as dyslexic. Responses for both statements yielded no statistically significant findings.

Survey statements #11, #12, and #16 all reported parent perspectives of teacher attitudes. There were statistically significant differences between the groups in each of the following three statements. Statement eleven: My child's teacher(s) sees my child as intelligent, yielded a statistically significant value of .033. Statement twelve: My child's teacher fosters motivation and hope in my child with dyslexia, yielded a statistically significance score of .048. Statement sixteen: The label of dyslexia helped my child's teachers understand and support my child, yielded a statistically significance value of .000.

There was no difference between the three educational environments when examining co-existing conditions of dyslexia. A value of .446 was found. Similarly, there was no statistically significant difference found between the educational environment groups when examining if parents switched their students from one environment to another, post-diagnosis. A value of .629 was demonstrated in the one-way ANOVA test.

Research question four. *What implications, if any, did the parent perspectives of dyslexic students have on leaders and policy makers?*

Research question four examined if parent perspectives of dyslexic students have implications for leaders and policy makers. The three learning environments included: dyslexic students in home schools, dyslexic students in private schools and dyslexic students in public schools. Although very few respondents reported changing school environments (N = 16), most did not change environments because of their child's dyslexia (N = 118). Table 31 reports the environment that parents believed as the best for their dyslexic student.

Table 31

Parent Respondents' Identified Ideal Environment for Dyslexic Children by Learning Environment Group

Educational Environment	Frequency	Valid Percent
Private School	52	47.3
Public School	15	60.9
Home School	21	80.0
Charter	1	80.9
Other	21	100.0
Total	110	
Missing	25	
Total	135	

Basic statistical information, such as frequency, were employed in analyzing the data. All data were uploaded into the Statistical Package for Social Sciences (SPSS) for analysis. Analysis of variance was used to determine that there was a statistically significant difference between the groups. The public school group was significantly less satisfied than the home school and private school groups. The home school and private school groups were similar to each other in value.

Summary of Significant Findings

Research question one. The research question examined: (a) resources for students with dyslexia, (b) knowledge and attitudes of teachers, and (c) accommodations for dyslexic learners, employed eight specific survey questions/statements. Respondents' answers to the eight statements revealed a range from positive satisfaction to neutral on factors identified for parent satisfaction.

Research question two. Research question two focused on comparing parents' satisfaction levels with three represented learning environments for dyslexic children: home school, private school and public school. The eight survey questions related to parent satisfaction were used for both research question one and research question two.

Analysis of variance revealed there was a statistically significant difference in perception between the learning environment groups. Parents with dyslexic children in the public school group were significantly less satisfied than the home school and private school groups. The home school and private school groups were similar to each other in value.

Research question three. Research question three explored how the perspectives of parents of dyslexic students differ on the basis of six factors: (1) the age of the child at time

of diagnosis, (2) interventions used with dyslexic students, (3) perceived child's attitudes, (4) perceived teacher attitudes, (5) co-existing conditions, and (6) discontinued attendance in one school setting and enrolling in another setting.

There was no statistically significant difference between the three educational groups when comparing age of child of diagnosis, perceived child's attitudes, co-existing conditions or changing from one school environment to another because of dyslexia. However, a statistically significant difference was found in multi-sensory teaching methods used in school. Parents of students in home school and private school environments agreed that students received multi-sensory instruction at school, but parents of public school students disagreed or were neutral. Parents of students in public schools also disagreed or were neutral regarding the statement that their teacher viewed their child/ren as intelligent, fosters motivation and hope and viewed the label of dyslexia as helping the teacher understand and support dyslexia.

Research question four. Research question four explored if there were any implications of the perspectives of parents of dyslexic students on policy makers and educational leaders. There were no direct implications for policy makers and educational leaders gathered from research question four. However, only 15 of the 135 parents who participated in the survey indicated that the public school environment was best for students with dyslexia.

Chapter Summary

Data from 135 parents of dyslexic students were analyzed to examine their perspectives. Parents' responses were analyzed to determine their satisfaction with learning

environments and how satisfactions levels compared between the three different learning environments. Six factors, including age, interventions, attitudes, co-existing conditions and changing school environments were analyzed to determine significant relationships. Chapter 5 provides conclusions from the findings presented and offers recommendations for further research.

Chapter 5: Conclusions and Recommendations

Study Purpose

The purpose of the study was to examine perceived levels of satisfaction of public, private and home school learning environments by central Minnesota parents of dyslexic children. The study examined differences in parents' perceived satisfaction with their dyslexic child's school, based on age of child at diagnosis, interventions used, student and teacher attitudes towards dyslexia, co-existing conditions with dyslexia, and implications for educational leaders and policy makers. Further, the study examined the differences in parent perspectives from three different learning environments: home school, private school and public school. Six factors were analyzed to determine significant relationships in the comparison of learning environments: (1) the age of the child at time of diagnosis, (2) interventions used with dyslexic students, (3) perceived attitudes of the child, (4) and perceived attitudes of the teacher, (5) co-existing conditions, and (6) discontinued attendance in one school setting and enrolling in another setting. Finally, the study examined whether or not the perspectives of parents of dyslexic children had implications for policy makers and educational leaders.

Research Questions

The following research questions guided the study:

1. How satisfied were central Minnesota parents of dyslexic students with their schools?
2. How did the 2015 level of school satisfaction of central Minnesota parents of dyslexic students differ on the basis of the students' learning environment?

3. How did the level of school satisfaction differ among central Minnesota parents' of dyslexic children based on the following factors:
   A. Age of child at time of diagnosis
   B. Interventions used with dyslexic students
   C. Child's attitudes toward dyslexia
   D. Teachers' attitudes towards dyslexia
   E. Co-existing conditions with dyslexia
   F. Discontinuing attendance in one school setting and enrolling in another school setting
4. What implications, if any, did the central Minnesota parental perspectives of dyslexic students have on leaders and policy makers?

Data Gathering and Analysis

The study identified dyslexic students from 90 private schools, 15 homeschools and 74 public schools who were evaluated for dyslexia by Dyslexia Testing Specialists between 2007 and 2013. A total of 179 students were identified, and their parents were mailed the study survey questionnaire, "Parent Perspectives of the Effects of Public, Private and Home School Learning Environments on Students with Dyslexia" (Appendix A), that was designed on the basis of the researcher's literature review. A total of 138 parents, 77.1% responded to the survey. After examining participants' responses, 135 surveys were determined to be valid.

Analysis of data was conducted at the St. Cloud Office of Statistical Analysis using the Statistical Package for Social Sciences (SPSS). For the purpose of the study, basic statistical data such as frequency and Pearson Chi-square were employed. One-way

ANOVAs were used to compare parent responses of dyslexic students enrolled in public schools and parents of dyslexic students enrolled in private school.

Significant findings were reported for each of the research questions.

Research Question One

Research question one examined: (a) resources for students with dyslexia, (b) knowledge and attitudes of teachers, and (c) accommodations for dyslexic learners. There were eight survey questions/statements related to items a, b, and c. Respondents' answers to the eight statements ranged from positive satisfaction to neutral on those factors identified for parent satisfaction. Satisfaction levels pertaining to the eight statements were assigned a number based on a 5-point scale (1 = Strongly Agree, 2 = Agree, 3 = Neutral, 5 = Strongly Agree).

Specifically, survey statement eleven: My child's teacher(s) sees my child as intelligent, yielded the lowest mean score (2.13), which indicated that a majority of parents agreed with the statement. In accordance with findings of Nugent (2007), parents were generally very positive about their dyslexic child's education across all school settings. Nugent (2007) also cited the work of Green and Shinn (1995) and Gerber and Popp (1999) who found similar findings.

Research Question Two

Research question two focused on comparing the levels of satisfaction of the parents of dyslexic children across the three following learning environments: home school, private school, and public school. The eight survey questions identified for parent satisfaction were used in addressing research question two. Analysis of variance revealed there was a

significant difference in perceptions between the learning environment groups. Parents from the public school group was significantly less satisfied with the public school environment for their dyslexic children than were parents from the home school and private school groups. Parents in the home school and private school groups had similar satisfaction to one another in their dyslexic children's learning environment.

According to Nugent's (2007) study which focused on parent perspectives of dyslexic learners in Ireland, it was found that parents who had dyslexic children attending specialist schools had the highest levels of satisfaction with their children's educational setting. Additional findings of Riddell, Brown, and Duffield (1994) revealed that parents of dyslexic children expressed concerns about dyslexia services offered in the secondary public school setting.

Research Question Three

Research question three explored the differences in the perspectives of central Minnesota parents of dyslexic students on the basis of six factors: (1) the age of the child at time of diagnosis, (2) interventions used with dyslexic students, (3) perceived child's attitudes, (4) perceived teacher attitudes, (5) co-existing conditions, and (6) discontinued attendance in one school setting and enrolling in another setting. When comparing these six factors, there was no significant difference found among the three educational groups. However, a significant difference was found related to the use of multi-sensory teaching methods in school. Parents of students in home school and private school environments agreed that students received multi-sensory instruction at school, but parents of public school students disagreed with, or were neutral on receiving multi-sensory instructions. Parents of

students in public schools also disagreed or were neutral regarding the teacher seeing their child as intelligent, fostering motivation and hope, and viewing the label of dyslexia as helping the teacher understand and support dyslexia.

Research Question Four

Research question four explored the perspectives of parents of dyslexic students on policy makers and educational leaders. There were no direct implications for policy makers and educational leaders that were concluded regarding research question four. However, only 15 of 135 or 11.1% of surveyed parents indicated that the public school environment was best for dyslexic students.

Analysis of Additional Data

Eighteen survey items were administered and analyzed to prepare recommendations to assist educational leaders and administrators in planning and delivering educational programming for dyslexic students. One of the 18 survey questions asked parent respondents to identify the role of the individual who first suggested their child may have dyslexia. None of the 131 respondents identified the principal as the first individual to suggest dyslexia. While 32 respondents, or 23.7%, identified a teacher or other school staff member as the first individual to suggest their child may have exhibited dyslexic characteristics. Additionally, 76.3% of respondents identified a non-school employee as the person to first suggest dyslexia as a possible diagnosis.

Another survey item illustrated that 77.3% of respondents agreed or strongly agreed they wished they would have had their child evaluated for dyslexia at an earlier age. This finding was consistent with that of research which concluded that reading disabilities of

students discovered by second grade had 10 times or greater chances of being remediated, when compared to students whose difficulties were not discovered until ninth grade.

Limitations of the Study

Roberts defined limitations as, "particular features of your study that may negatively affect the results of your ability to generalize" (Roberts, 2010, p. 165). The following were limitations of the study:

- The study was voluntary and limited by the number of surveys completed. Several participants initiated the survey, but failed to complete the entire survey.
- The honesty of those respondents who in answered survey questions could not be assured.
- The study was conducted with 179 parents of dyslexic students in central Minnesota, which may not represent the perceptions of all parents of dyslexic students in Minnesota, or in other states.

Recommendations for Future Practice

The following recommendations are based on the study findings and conclusions. There commendations may be incorporated by school administrators and leaders in their future practices.

1. Administrators and school leaders would be encouraged to provide teachers with professional development activities that offer instruction in early identification of dyslexia. Such training may lead to earlier referral of, and specific instruction for, dyslexic learners.

2. Administrators and school leaders would be encouraged to suggest that teachers share their knowledge of dyslexia with parents at the earliest opportunity when intervention may seem warranted. Schiffman (1964) suggested that emotional and behavioral difficulties may be diminished with early identification of dyslexia.
3. Administrators and school leaders would be encouraged to suggest that parents seek additional support outside of the school day for multi-sensory instruction and evaluation for their dyslexic children. Shaywitz (2003) found that a diagnosis of dyslexia can have a positive effect on a child's self-esteem.
4. Administrators and school leaders would be encouraged to provide teachers with professional development opportunities which incorporate multi-sensory strategies into classroom instruction and promote student self-worth. Brooks (2001) asserted that the mindset of teachers is important to the success of dyslexic students.

Recommendations for Further Study

Based on the research findings and conclusions drawn from the data, the following recommendations are offered as potential topics of further research:

- A replication of the study may be conducted in additional regions of Minnesota and in other states throughout the United States.
- It would be valuable to replicate the study exploring a larger sample of parent participants, especially including parents who have had their children taught in a home school environment.
- Further research may be conducted to determine specific reasons parents reported strong agreement or strong disagreement on survey items related to school

engagement and the preferred school environment in which dyslexic children had been served.

- Further research may be conducted to determine teachers' and administrators beliefs about, and perspectives on, dyslexia; and how to provide instruction and accommodations for dyslexic learners.

Summary

The purpose of the study was to examine perceived levels of satisfaction of public, private and home school learning environments by central Minnesota parents of dyslexic children. The study examined differences in parents' perceived satisfaction with their dyslexic child's school, based on age of child at diagnosis, interventions used, student and teacher attitudes towards dyslexia, co-existing conditions with dyslexia, and implications for educational leaders and policy makers.

Data analysis revealed that parents' school satisfaction levels were similar in home school and private school groups. Those results established higher satisfaction levels than those reported by parents of the public school group. Of the 135 respondents, 15 or 11.1% believed that the public school was the best environment for dyslexic learners. Despite those findings, only 16 of 135 respondents or 11.9% changed schools based on their children's dyslexia diagnosis. The results of the study provide recommendations for future practice and research that may be beneficial to the field of educational leadership.

In light of the estimated 15-20% of the school population that dyslexia affects (Washburn et al., 2011), it would be reasonable to assume that students with dyslexia are being underdiagnosed and, therefore, underserved in schools. Parents are the ultimate

consumers of public education. Parents are the care providers and decision makers for their children's education. Therefore, it would be of value for educational leaders to explore and be cognizant of the low satisfaction levels parents of dyslexic children expressed about the performance of public schools with their children.

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Appendix A: Study Survey

Parent Perspectives of the Effects of Public, Private and Home School Learning Environments on Students with Dyslexia

School leaders need your feedback! Your feedback will be critical for school leaders making educational choices for students with dyslexia. The information from this study will identify from the parents' perspectives the impact of public, private and home school learning environments on their children with dyslexia. Insight will be gained that will assist educational leaders meet the academic and social needs of students with dyslexia. The survey is confidential and anonymous. The time to complete the survey is approximately 15-20 minutes. The completed survey should be mailed back to the researcher, Kelly Haws in the self-addressed, stamped envelope that is provided.

Your child's gender (check the line that applies) _____ (1)Male _____ (2)Female

Who first suggested that your child may have dyslexia? (check their role or position)
_____(1)teacher
_____(2)principal
_____(3)other school staff
_____(4)doctor
_____(5)friend of the family
_____(6)grandparent
_____(7)acquaintance of the family
_____(8)close friend
_____(9)aunt, uncle or another extended family member
_____(10)other

What was the age of your child when he/she was first professionally identified with dyslexia?_____

Did you switch your child to a different school because of his/her dyslexia? _____(1)Yes _____(2)No
If yes, what type of schools were involved? (e.g. private school to public school, home school to private school, online learning to charter school, public school to another public school, private school to another private school etc), _____

Which environment do you believe is the best environment for a child with dyslexia?
_____ (1)private school
_____ (2)public school
_____ (3)home school
_____ (4)charter school
_____ (5)on-line learning
_____ (6)other

Do you believe this depends on the age of your child? ____ If yes,
how?_____
_____
_____

Does your child have any conditions in addition to dyslexia?_____ If yes, please list_____

Is your child with dyslexia on an Individual Education Plan (IEP) or 504 Plan? _____Yes _____No
If yes, which one?
_____(1) IEP
_____(2) 504 Plan
_____ (3) Both

For each statement below, please check the box that represents your perspective.

1. There is a history of dyslexia in our family.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

2. I wish I would have had my child evaluated for dyslexia at an earlier age.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

3. My child had warning signs of dyslexia in preschool.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

4. My child became less engaged with school as he/she grew older.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

5. My child expressed there was something wrong with him/her.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

6. My child's self-esteem improved after being identified as dyslexic.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

7. My child has superior talents in certain areas.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

8. My child receives multi-sensory teaching methods outside of school. (e.g. a private tutor)

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

9. My child's school has the resources to provide intensive treatment for dyslexia, which includes multi-sensory instruction and accommodations.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

10. My child's teacher(s) has the knowledge and skills to provide accommodations to ensure academic success.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

11. My child's teacher(s) sees my child as intelligent.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

Comments_____

_____

_____

12. My child's teacher fosters motivation and hope in my child with dyslexia.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

Comments_____

_____

_____

13. My child's teacher(s) is able to support his/her learning.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

14. My child had a difficult time learning a foreign language.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

15. My child receives multi-sensory teaching methods at school.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

16. The label of dyslexia helped my child's teachers understand and support my child.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

17. My child's teacher(s) has enough information about dyslexia.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

18. I believe my child with dyslexia will attend college or vocational school and graduate.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

19. I believe my child will make a career given his/her strengths.

(1)Strongly Agree	(2)Agree	(3)Neutral	(4)Disagree	(5)Strongly Disagree	(6)Unable to Rate

Appendix B: IRB Approval

OFFICE OF RESEARCH AND SPONSORED PROGRAMS
ST. CLOUD STATE UNIVERSITY.

Institutional Review Board (IRB)

Administrative Services 210
Website: stcloudstate.edu/osp *Email: osp@stcloudstate.edu*
Phone: 320-308-4932

Name: Haws Kelly
Address: 20212 Edom Rd.
Cold Spring, MN 56320 USA
Email: kmhaws@stcloudstate.edu

IRB APPLICATION DETERMINATION: APPROVED

Co-Investigator:

Project Title: A Comparative Study of Parent Perspectives of the Effects of Public, Private, and Home School Learning Env. Of Students with Dyslexia: Implications For Students and Leaders

Advisor: John Eller

The Institutional Review Board has reviewed your application to conduct research involving human subjects. Your project has been: **APPROVED**

Please note the following important information concerning IRB projects:

- The principal investigator assumes the responsibilities for the protection of human subjects in this project. Any adverse events must be reported to the IRB as soon as possible (ex. research related injuries, harmful outcomes, significant withdrawal of subject population, etc.).

- For expedited or full board review, the principal investigator must submit a Continuing Review/Final Report form in advance of the expiration date indicated on this letter to report conclusion of the research or request an extension.

-Exempt reviews only require the submission of a Continuring Review/Final Report form in advance of the expiration date indicated in this letter if an extension of time is needed.

- Approved consent forms display the official IRB stamp which documents approval and expiration dates. If a renewal is requested and approved, new consent forms will be officially stamped and reflect the new approval and expiration dates.

- The principal investigator must seek approval for any changes to the study (ex. research design, consent process, survey/interview instruments, funding source, etc.). The IRB reserves the right to review the research at any time.

Good luck on your research. If we can be of further assistance, please contact the Office of Research and Sponsored Programs at 320-308-4932 or email lidonnay@stcloudstate.edu. Use the SCSU IRB number listed on any forms submitted which relate to this project, or on any correspondence with the IRB.

For the Institutional Review Board:

Linda Donnay
IRB Administrator
Office of Research and Sponsored Programs

For St. Cloud State University:

Patrica Hughes
Interim Associate Provost for Research
Dean of Graduate Studies

OFFICE USE ONLY

SCSUIRB# 1480 - 1817	**Type of Review:** Exempt	**Today's Date:** 7/23/2015
1st Year Approval Date: 7/22/2015	**2nd Year Approval Date:**	**3rd Year Approval Date:**
1st Year Expiration Date: 7/21/2018	**2nd Year Expiration Date:**	**3rd Year Expiration Date:**

There are no foreseeable risks associated with participation in this study.

Benefits

The results of this survey will be published to assist educational leaders to better meet the academic and social needs of students with dyslexia in central and west central Minnesota.

Confidentiality